

**INFO #: 15858378 GTC BIOTHERAPEUTICS**  
**Dawn Corey Greenaway**

NB 04/20/2005  
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SHIP VIA: **Ariel dawn.corey@gtc-bio.com**

*Ariel*

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**Dawn Corey Greenaway**

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## ARTICLE INFORMATION

**U S DEPARTMENT OF HEALTH AND HUMAN SERVICES**  
**91-3242(5TH ED.):1-29 1991**  
**KABAT,EA;**  
**SEQUENCES OF PROTEINS OF IMMUNOLGICAL INTEREST**

NOTES:

CCD	4889
SHIP VIA	<b>Ariel dawn.corey@gtc-bio.com</b>
ORDER #	
BILLING REF	<b>76614-764427</b>
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ATTENTION	<b>Dawn Corey Greenaway</b>
INFO #	<b>15858378</b>

SIGNAL PEPTIDES OF HUMAN KAPPA LIGHT CHAINS

rian, P.W.;  
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June 3, Gamma  
Stockholm, pp.

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Natl. Acad.

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.. Acad. Sci.

INARIANT RESIDUES	1	2	3	4	VRI-ZI	3D6	7D8	8	9	9'	HK102	11	12	13	14	17	18	19	20	21	22	23
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48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 # OF PSEUDO SEQUENCES # OF AMINO ACIDS  
 GF4 IV KAPPA PB17IV FR-001 WALKER DAUDI VJ1 HK100 Va 'CL 'CL 'CL 'CL 'CL 'CL 'CL 'CL 'EVJK11 VKAPPA  
 /1-1 EV15 IV 'CL 'CL 'CL 'CL 'CL 'CL 'CL 'CL 'EVJK11 VKAPPA

## SIGNAL PEPTIDES OF HUMAN KAPPA LIGHT CHAINS (cont'd)

OCCURRENCES OF MOST COMMON AMINO ACID	VARIABILITY
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-29	
-28	
-27	
-26	
-25	
-24	
-23	
-22	16(MET) 2.1
-21	16(ASP) 2.1
-20	51(MET) 2.
-19	23(ARG) 14.
-18	18(VAL) 21.
-17	41(GLY) 6.1
-16	43(ALA) 6.3
-15	48(GLN) 4.5
-14	47(LEU) 4.6
-13	49(GLY) 3.3
-12	27(GLY) 12.
-11	49(LEU) 3.4
-10	58(LEU) 1.
-9	47(LEU) 6.2
-8	55(LEU) 4.2
-7	56(TRP) 3.2
-6	43(LEU) 6.9
-5	47(PRO) 6.3
-4	33(GLY) 9.5
-3	28(THR) 11.
-2	24(THR) 16.
-1	34(GLY) 11.

## PRECURSOR OF:

- 1) HK101'CL: HUMAN KAPPA LI
- 2) HK137'CL: HUMAN KAPPA LI
- 3) VKI-Ch1'CL: HUMAN KAPPA
- 4) HuVHCAMP'CL: HUMAN KAPPA
- 5) VKI-EI'CL: HUMAN KAPPA L
- 6) 3D6'CL: HUMAN KAPPA LIGH
- 7) V108'CL: HUMAN KAPPA LIG
- 8) Vb'CL: HUMAN KAPPA LIGH
- 9) Vb''CL: HUMAN KAPPA LIGH
- 10) HK102'CL: HUMAN KAPPA LI
- 11) 2A12'CL: HUMAN KAPPA LIG
- 12) 1H1'CL: HUMAN KAPPA LIGH
- 13) 2C12'CL: HUMAN KAPPA LIG
- 14) 1B11'CL: HUMAN KAPPA LIG
- 15) Vd'CL: HUMAN KAPPA LIGH
- 16) Va'CL: HUMAN KAPPA LIGH
- 17) Ve'CL: HUMAN KAPPA LIGH
- 18) V13'CL: HUMAN KAPPA LIGH
- 19) GM 607'CL: HUMAN KAPPA I
- 20) A3'CL: HUMAN KAPPA LIGH
- 21) RPMI6410'CL: HUMAN KAPP
- 22) A2'CL: HUMAN KAPPA LIGH
- 23) A23'CL: HUMAN KAPPA LIGH
- 24) NG9'CL: HUMAN KAPPA LIGH
- 25) EIC (R)'CL: HUMAN KAPPA
- 26) HAB 14.1'CL: HUMAN KAPP
- 27) HAB 14.2'CL: HUMAN KAPP
- 28) HAB 16.1'CL: HUMAN KAPP
- 29) NOV'CL: HUMAN KAPPA LIGH
- 30) 8E10'CL: HUMAN KAPPA LIGH
- 31) TB3'CL: HUMAN KAPPA LIGH
- 32) Humkv325'CL: HUMAN KAPP
- 33) EV1-15'CL: HUMAN KAPPA
- 34) IARC/BL41'CL: HUMAN KAPP
- 35) Humkv305'CL: HUMAN KAPP
- 36) LS1'CL: HUMAN KAPPA LIGH
- 37) LS2'CL: HUMAN KAPPA LIGH
- 38) LS4'CL: HUMAN KAPPA LIGH
- 39) LS5'CL: HUMAN KAPPA LIGH
- 40) LS6'CL: HUMAN KAPPA LIGH
- 41) LS7'CL: HUMAN KAPPA LIGH
- 42) LS8'CL: HUMAN KAPPA LIGH
- 43) Vg'CL: HUMAN KAPPA LIGH
- 44) Vh'CL: HUMAN KAPPA LIGH
- 45) CLL'CL: HUMAN KAPPA LIGH
- 46) Humkv328'CL: HUMAN KAPP
- 47) Humka31as'CL: HUMAN KAPP
- 48) GF4/1.1'CL: HUMAN KAPP
- 49) K-EV15'CL: HUMAN KAPPA
- 50) VKAPPA IV GERMELINE'CL:
- 51) PB17X'CL: HUMAN KAPPA
- 52) FK-001'CL: HUMAN KAPPA
- 53) HK100'CL: HUMAN KAPPA L
- 54) K-EVJK11'CL: HUMAN KAP

## REFERENCE: SIGNAL PEPTI

- 1) HK101'CL: BENTLEY, D.L.
- 2) HK137'CL: BENTLEY, D.L.
- 3) VKI-Ch1'CL: LOTSCHER, E  
69,215-223.
- 4) HuVHCAMP'CL RIECHMANN,
- 5) VKI-EI'CL STRAUBINGER,
- 6) 3D6'CL: FELGENHAUER, M.
- 7) V108'CL: RUBER, C., THIEE
- 8) Vb'CL: PECH, M., JAENICHE  
(CHECKED BY AU)
- 9) Vb''CL: PECH, M., JAENICHE  
(CHECKED BY AU)
- 10) HK102'CL: BENTLEY, D.L.  
LINDENMAIER, W.
- 11) 2A12'CL: LEVY, S., MENDEI
- 12) 1H1'CL: LEVY, S., MENDEI
- 13) 2C12'CL: LEVY, S., MENDEI
- 14) 1B11'CL: LEVY, S., MENDEI
- 15) Vd'CL: PECH, M., JAENICHE  
(CHECKED BY AU)
- 16) Vm'CL: PECH, M., JAENICHE  
(CHECKED BY AU)
- 17) Ve'CL: PECH, M., JAENICHE  
(CHECKED BY AU)
- 18) V13'CL: JAENICHEN, H., R.  
BY AUTHOR 12/14
- 19) GM 607'CL: KLOBECK, H.G.
- 20) A3'CL: STRAUBINGER, B.  
(1988) J.MOL.B
- 21) RPMI6410'CL: KLOBECK, H.  
LEDER, P. (1986)
- 22) A2'CL: SCOTT, M.G., CRM
- 23) A23'CL: STRAUBINGER, B.  
(1988) J.MOL.B
- 24) NG9'CL: BENTLEY, D.L. (
- 25) EIC (B)'CL: KIPPS, T.J.
- 26) HAB 14.1'CL: KIPPS, T.J.
- 27) HAB 14.2'CL: KIPPS, T.J.
- 28) HAB 16.1'CL: KIPPS, T.J.
- 29) NOV'CL: KIPPS, T.J., TOM
- 30) 8E10'CL: DERSIMONIAN, H.
- 31) TB3'CL: DERSIMONIAN, H.
- 32) Humkv325'CL: KIPPS, T.J
- 33) EV1-15'CL: NEWKIRK, M.M
- 34) IARC/BL41'CL: KLOBECK,
- 35) Humkv305'CL: CHEN, P.P.  
PROC.NATL.ACAD
- 36) LS1'CL: SILBERSTEIN, L.
- 37) LS2'CL: SILBERSTEIN, L.

## PRECURSOR OF:

- 1) HK101'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP I
- 2) HK137'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP I
- 3) VKI-CH1'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP I
- 4) BuVRCAMP'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP I
- 5) VKI-K1'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP I
- 6) 3D6'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP I
- 7) V108'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP I
- 8) Vd'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP I
- 9) Vb''CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP I
- 10) HK102'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP I
- 11) 2A12'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP I
- 12) 1H1'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP I
- 13) 2C12'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP I
- 14) 1B11'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP I
- 15) Vd'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP I
- 16) Va'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP I
- 17) Ve'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP I
- 18) V13'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP I
- 19) GM 607'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP II
- 20) A3'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP II
- 21) RPMI6410'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP II
- 22) A2'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP II
- 23) A23'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP II
- 24) NG9'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 25) BIC (R)'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 26) HAR 14.1'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 27) HAR 14.2'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 28) HAR 16.1'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 29) NOV'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 30) BE10'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 31) TH3'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 32) Rumkv325'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 33) EV1-15'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 34) IARC/BL41'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 35) Rumkv305'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 36) LS1'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 37) LS2'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 38) LS4'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 39) LS5'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 40) LS6'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 41) LS7'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 42) LS8'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 43) Vg'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 44) Vh'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 45) CLL'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 46) Rumkv328'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 47) Bunka310'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 48) GF4/1.1'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 49) K-EV15'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP III
- 50) VEVAKKA IV GERMLINE'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP IV
- 51) PB17IV'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP IV
- 52) FE-001'CL: HUMAN KAPPA LIGHT CHAINS SUBGROUP IV
- 56) HK100'CL: HUMAN KAPPA LIGHT CHAIN OF HK100
- 62) K-EVK11'CL: HUMAN KAPPA PSEUDOGENE

## REFERENCE: SIGNAL PEPTIDES OF HUMAN KAPPA LIGHT CHAINS

- 1) HK101'CL: BENTLEY,D.L. & RABBITS,T.H. (1980) NATURE,288,730-733. (CHECKED BY AUTHOR 11/30/82)
- 2) HK137'CL: BENTLEY,D.L. & RABBITS,T.H. (1983) CELL,32,181-189.
- 3) VKI-CH1'CL: LOTSCHER,E.,ZIMMER,F.-J.,KLOPSTOCK,T.,GREESCHIK,K.-H.,JAENICHEN,R.,STRAUBINGER,B. & ZACHAU,H.G. (1988) GENE,69,215-223.
- 4) BuVRCAMP'CL: RIECHMANN,L.,CLARK,M.,NOLDMANN,H. & WINTER,G. (1988) NATURE,332,323-327.
- 5) VKI-K1'CL: STRAUBINGER,B.,THIEBE,R.,PECH,M. & ZACHAU,H.G. (1988) GENE,69,209-214.
- 6) 3D6'CL: FELGENHAUER,M.,KOHL,J. & RUKER,F. (1990) NUCL.ACIDS RES.,18,4927.
- 7) V108'CL: HUBER,C.,THIEBE,R.,HAMFISTER,H.,SMOLA,H.,LOTSCHER,E. & ZACHAU,G. (1990) NUCL.ACIDS RES.,18,3475-3478.
- 8) Vb'CL: PECH,M.,JAENICHEN,H.-R.,POHLENZ,H.-D.,NEUMAIER,P.S.,KLOBECK,H.-G. & ZACHAU,H.G. (1984) J.MOL.BIOL.,176,1-16. (CHECKED BY AUTHOR 12/14/84)
- 9) Vb''CL: PECH,M.,JAENICHEN,H.-R.,POHLENZ,H.-D.,NEUMAIER,P.S.,KLOBECK,H.-G. & ZACHAU,H.G. (1984) J.MOL.BIOL.,176,1-16. (CHECKED BY AUTHOR 12/14/84)
- 10) HK102'CL: BENTLEY,D.L. & RABBITS,T.H. (1980) NATURE,288,730-733. (CHECKED BY AUTHOR 11/30/82); JAENICHEN,H.-R.,PECH,M.,LINDENMAIER,W.,WILDGRUBER,N. & ZACHAU,H.G. (1984) NUC.ACIDS RES.,12,5249-5263.
- 11) 2A12'CL: LEVY,S.,MENDEL,E.,KON,S.,AVNUR,Z. & LEVY,R. (1988) J.EXP.MED.,168,475-489.
- 12) 1H1'CL: LEVY,S.,MENDEL,E.,KON,S.,AVNUR,Z. & LEVY,R. (1988) J.EXP.MED.,168,475-489.
- 13) 2C12'CL: LEVY,S.,MENDEL,E.,KON,S.,AVNUR,Z. & LEVY,R. (1988) J.EXP.MED.,168,475-489.
- 14) 1B11'CL: LEVY,S.,MENDEL,E.,KON,S.,AVNUR,Z. & LEVY,R. (1988) J.EXP.MED.,168,475-489.
- 15) Vd'CL: PECH,M.,JAENICHEN,H.-R.,POHLENZ,H.-D.,NEUMAIER,P.S.,KLOBECK,H.-G. & ZACHAU,H.G. (1984) J.MOL.BIOL.,176,1-16. (CHECKED BY AUTHOR 12/14/84)
- 16) Va'CL: PECH,M.,JAENICHEN,H.-R.,POHLENZ,H.-D.,NEUMAIER,P.S.,KLOBECK,H.-G. & ZACHAU,H.G. (1984) J.MOL.BIOL.,176,1-16. (CHECKED BY AUTHOR 12/14/84)
- 17) Ve'CL: PECH,M.,JAENICHEN,H.-R.,POHLENZ,H.-D.,NEUMAIER,P.S.,KLOBECK,H.-G. & ZACHAU,H.G. (1984) J.MOL.BIOL.,176,1-16. (CHECKED BY AUTHOR 12/14/84)
- 18) V13'CL: JAENICHEN,H.-R.,PECH,M.,LINDENMAIER,W.,WILDGRUBER,N. & ZACHAU,H.G. (1984) NUC.ACIDS RES.,12,5249-5263. (CHECKED BY AUTHOR 12/14/84)
- 19) GM 607'CL: KLOBECK,H.G.,SOLOMON,A. & ZACHAU,H.G. (1984) NATURE,309,73-76. (CHECKED BY AUTHOR 06/27/85)
- 20) A3'CL: STRAUBINGER,B.,HUBER,F.,LORENZ,W.,OSTERHOLZER,E.,PARGENT,W.,PECH,M.,POHLENZ,H.-D.,ZIMMER,F.-J. & ZACHAU,H.G. (1988) J.MOL.BIOL.,199,23-34.
- 21) RPMI6410'CL: KLOBECK,H.G.,MEINDL,A.,COMBRITIO,G.,SOLOMON,A. & ZACHAU,H.G. (1985) NUCL.ACIDS RES.,14,3951-3970.
- 22) A2'CL: SCOTT,M.G.,CRIMMINS,D.L.,MCCOURT,D.W.,ZOCHER,R.,ZACHAU,H.G. & NAHM,M.H. (1989) J.IMMUNOL.,143,4110-4116.
- 23) A23'CL: STRAUBINGER,B.,HUBER,F.,LORENZ,W.,OSTERHOLZER,E.,PARGENT,W.,PECH,M.,POHLENZ,H.-D.,ZIMMER,F.-J. & ZACHAU,H.G. (1988) J.MOL.BIOL.,199,23-34.
- 24) NG9'CL: BENTLEY,D.L. (1984) NATURE,307,77-80.
- 25) BIC (R)'CL: KIPPS,T.J.,TOMHAVE,E.,CHEN,P.P. & CARSON,D.A. (1988) J.EXP.MED.,167,840-852.
- 26) HAR 14.1'CL: KIPPS,T.J.,TOMHAVE,E.,CHEN,P.P. & CARSON,D.A. (1988) J.EXP.MED.,167,840-852.
- 27) HAR 14.2'CL: KIPPS,T.J.,TOMHAVE,E.,CHEN,P.P. & CARSON,D.A. (1988) J.EXP.MED.,167,840-852.
- 28) HAR 16.1'CL: KIPPS,T.J.,TOMHAVE,E.,CHEN,P.P. & CARSON,D.A. (1988) J.EXP.MED.,167,840-852.
- 29) NOV'CL: KIPPS,T.J.,TOMHAVE,E.,CHEN,P.P. & FOX,R.I. (1989) J.IMMUNOL.,142,4261-4268.
- 30) BE10'CL: DERSIMONIAN,H.,MCADAM,K.P.W.J.,MACKWORTH-YOUNG,C. & STOLLAR,B.D. (1989) J.IMMUNOL.,142,4027-4033.
- 31) TH3'CL: DERSIMONIAN,H.,MCADAM,K.P.W.J.,MACKWORTH-YOUNG,C. & STOLLAR,B.D. (1989) J.IMMUNOL.,142,4027-4033.
- 32) Rumkv325'CL: KIPPS,T.J.,TOMHAVE,E.,CHEN,P.P. & CARSON,D.A. (1988) J.EXP.MED.,167,840-852.
- 33) EV1-15'CL: NEMKIRK,M.M.,GRAM,H.,HEINRICH,G.F.,OSTBERG,L.,CAPRA,J.D. & WASSERMAN,D. (1988) J.CLIN.INVEST.,81,1511-1518.
- 34) IARC/BL41'CL: KLOBECK,H.G.,MEINDL,A.,COMBRITIO,G.,SOLOMON,A. & ZACHAU,H.G. (1985) NUCL.ACIDS RES.,13,6499-6513.
- 35) Rumkv305'CL: CHEN,P.P.,ALBRANDT,K.,ORIDA,N.K.,RADOUX,V.,CHEN,E.Y.,SCHRANTZ,R.,LIU,F.-T. & CARSON,D.A. (1986) PROC.NATL.ACAD.SCI.USA,83,8318-8322. (CHECKED BY AUTHOR 06/06/87)
- 36) LS1'CL: SILBERSTEIN,L.E.,LITWIN,S. & CARMACK,C.E. (1989) J.EXP.MED.,169,1631-1643.
- 37) LS2'CL: SILBERSTEIN,L.E.,LITWIN,S. & CARMACK,C.E. (1989) J.EXP.MED.,169,1631-1643.

## SIGNAL PEPTIDES OF HUMAN LN

## REFERENCE: SIGNAL PEPTIDES OF HUMAN KAPPA LIGHT CHAINS (cont'd)

- 38) LS4'CL: SILBERSTEIN,L.E.,LITWIN,S. & CARMACK,C.E. (1989) J.EXP.MED.,169,1631-1643.  
 39) LS5'CL: SILBERSTEIN,L.E.,LITWIN,S. & CARMACK,C.E. (1989) J.EXP.MED.,169,1631-1643.  
 40) LS6'CL: SILBERSTEIN,L.E.,LITWIN,S. & CARMACK,C.E. (1989) J.EXP.MED.,169,1631-1643.  
 41) LS7'CL: SILBERSTEIN,L.E.,LITWIN,S. & CARMACK,C.E. (1989) J.EXP.MED.,169,1631-1643.  
 42) LSB'CL: SILBERSTEIN,L.E.,LITWIN,S. & CARMACK,C.E. (1989) J.EXP.MED.,169,1631-1643.  
 43) Vg'CL: PECH,M. & ZACHAU,H.G. (1984) NUC.ACIDS RES.,12,24,9229-9236.  
 44) Vr'CL: PECH,M. & ZACHAU,H.G. (1984) NUC.ACIDS RES.,12,24,9229-9236.  
 45) CL'CL: JIRIK,F.R.,SORGE,J.FONG,S.,HEITZMANN,J.G.,CURD,J.G.,CHEN,P.P.,GOLDFIEN,R. & CARSON,D.A. (1986) PROC.NAT.ACAD.SCI.USA,83,2195-2199.  
 46) Humkv328'CL: CHEN,P.P.,ROBBINS,D.L.,JIRIK,F.R.,KIPPS,T.J. & CARSON,D.A. (1987) J.EXP.MED.,166,1900-1905.  
 47) Humka31es'CL: CHEN,P.P.,ROBBINS,D.L.,JIRIK,F.R.,KIPPS,T.J. & CARSON,D.A. (1987) J.EXP.MED.,166,1900-1905.  
 48) GF4/1.1'CL: GILLIES,S.D.,DORAI,H.,WESOLOWSKI,J.,MAJEAU,G.,YOUNG,D.,BOYD,J.,GARDNER,J. & JAMES,K. (1989) BIO/TECH.,7,799-804.  
 49) K- EV15'CL: STAVNEZER,J.,KEKISH,O.,BATTER,D.,GRENIER,J.,BALAZS,I.,HENDERSON,E. & ZEGERS,B.J.M. (1985) NUCL.ACIDS RES.,13,3495-3514.  
 50) VKAPPA IV GERMINE'CL: KLOBECK,H.G.,BORNKAMM,G.W.,COMBRIATO,G.,MOCIKAT,R.,POHLENZ,H.D. & ZACHAU,H.G. (1985) NUCL.ACIDS RES.,13,6515-6529.  
 51) PB175V'CL: MARSH,P.,MILLS,F. & GOULD,B. (1985) NUCL.ACIDS RES.,13,6531-6544. (CHECKED BY AUTHOR 03/19/86).  
 52) FK-001'CL: NAKATANI,T.,NOMURA,N.,HORIGOME,K.,OTSUKA,H. & NOGUCHI,H. (1989) BIO/TECH.,7,805-810.  
 53) WALKER'CL: KLOBECK,H.G.,COMBRIATO,G. & ZACHAU,H.G. (1984) NUC.ACIDS RES.,12,18,6995-7006.  
 54) DADDI'CL: KLOBECK,H.G.,COMBRIATO,G. & ZACHAU,H.G. (1984) NUC.ACIDS RES.,12,18,6995-7006.  
 55) VV1'CL: KLOBECK,H.G.,BORNKAMM,G.W.,COMBRIATO,G.,MOCIKAT,R.,POHLENZ,H.D. & ZACHAU,H.G. (1985) NUCL.ACIDS RES.,13,6515-6529.  
 56) HK100'CL: BENTLEY,D.L. & RABBITS,T.H. (1980) NATURE,288,730-733. (CHECKED BY AUTHOR 11/30/82).  
 57) Va'CL: PECH,M.,JAENICHEN,H.-R.,POHLENZ,H.-D.,NEUMAYER,P.S.,KLOBECK,H.-G. & ZACHAU,H.G. (1984) J.MOL.BIOL.,176,1-16. (CHECKED BY AUTHOR 12/14/84)  
 58) V2'CL: JAENICHEN,H.-R.,PECH,M.,LINDENMAIER,W.,WILDGUBER,N. & ZACHAU,H.G. (1984) NUC.ACIDS RES.,12,5249-5263. (CHECKED BY AUTHOR 12/14/84)  
 59) V14'CL: JAENICHEN,H.-R.,PECH,M.,LINDENMAIER,W.,WILDGUBER,N. & ZACHAU,H.G. (1984) NUC.ACIDS RES.,12,5249-5263. (CHECKED BY AUTHOR 12/14/84)  
 60) VS2'CL: JAENICHEN,H.-R.,PECH,M.,LINDENMAIER,W.,WILDGUBER,N. & ZACHAU,H.G. (1984) NUC.ACIDS RES.,12,5249-5263. (CHECKED BY AUTHOR 12/14/84)  
 61) VS5'CL: JAENICHEN,H.-R.,PECH,M.,LINDENMAIER,W.,WILDGUBER,N. & ZACHAU,H.G. (1984) NUC.ACIDS RES.,12,5249-5263. (CHECKED BY AUTHOR 12/14/84)  
 62) K- EVJK11'CL: STAVNEZER,J.,KEKISH,O.,BATTER,D.,GRENIER,J.,BALAZS,I.,HENDERSON,E. & ZEGERS,B.J.M. (1985) NUCL.ACIDS RES.,13,3495-3514.  
 63) PSEUDO VKAPPA 24'CL: JOHO,R.,GERSHENFELD,H. & WEISSMAN,I.L. (1984) EMBO J.,3,185-191.

## GENERAL NOTES: SIGNAL PEPTIDES OF HUMAN KAPPA LIGHT CHAINS

THE NUCLEOTIDE SEQUENCES OF DIFFERENT CLONES CONTAIN AN INTERVENING SEQUENCE OF NONTRANSLATED BASES OF VARYING LENGTHS. THE SPLICING OUT OF THESE INTRONS COULD OCCUR BETWEEN AMINO ACID POSITIONS -5 AND -4, OR -2 AND -3, OR WITHIN POSITION -4. HOWEVER, IF THE SPLICING REQUIRES GT AT THE 5'-END AND AG AT THE 3'-END OF THE INTRON, THIS WOULD DEFINE THE JOINING AS OCCURRING WITHIN THE CODON OF AMINO ACID RESIDUE -4. THE INTRON SIZES OF DIFFERENT SEQUENCES ARE LISTED BELOW:

CLONE:	SOURCE:	INTRON SIZE:
HK100'CL	HUMAN FETAL LIVER DNA	118
HK101'CL	HUMAN FETAL LIVER DNA	125
HK102'CL	HUMAN FETAL LIVER DNA	125
MOPC173B'CL	MOUSE ADULT DNA	121
S107B'CL	MOUSE ADULT MYELOMA DNA	175
LS'CL	MOUSE ADULT LIVER DNA	175
K2'CL	MOUSE EMBRYO DNA	118
MPC11'CL	MOUSE ADULT DNA	242
VKAPPA167'CL	MOUSE ADULT LIVER DNA	365
L6'CL	MOUSE ADULT LIVER DNA	113
L7'CL	MOUSE ADULT LIVER DNA	206
T1'CL	MOUSE ADULT MYELOMA DNA	113
T2'CL	MOUSE ADULT MYELOMA DNA	215
VT1/B'CL	MOUSE ADULT MYELOMA DNA	113
VTNP'CL	MOUSE HYBRIDOMA DNA	177

## SPECIFIC NOTES: SIGNAL PEPTIDES OF HUMAN KAPPA LIGHT CHAINS

- 21) RPMI6410'CL: WEIR,L. & LEDER,P. FOUND POSITION -9 AS ARG INSTEAD OF MET.  
 25) HIC (R)'CL: FROM PATIENT WITH CHRONIC LYMPHOCYTIC LEUKEMIA.  
 26) HAH 14.1'CL: cDNA CLONE DERIVED FROM HAH(R).  
 27) HAH 14.2'CL: cDNA CLONE DERIVED FROM HAH(R).  
 28) HAH 16.1'CL: cDNA CLONE DERIVED FROM HAH(R).  
 29) NOV'CL: FROM EPSTEIN-BARR VIRUS TRANSFORMED SALIVARY GLAND LYMPHOCYTES OF PATIENT WITH PRIMARY SJOGREN'S SYNDROME 17,109-CR14.  
 30) 8E10'CL: THIS HYBRIDOMA WAS GENERATED BY FUSION OF PERIPHERAL BLOOD CELLS OF A PATIENT WITH LEPROSY AND THE HUMAN MYELOBLASTOID CELL LINE GM4672.  
 31) TH3'CL: THIS HYBRIDOMA WAS GENERATED BY FUSION OF PERIPHERAL BLOOD CELLS OF A PATIENT WITH LEPROSY AND THE HUMAN MYELOBLASTOID CELL LINE GM4672.  
 45) CL'L'CL: FROM HUMAN CHRONIC LEUKEMIA CELL WITH AN IgM ANTI-IgG  
 46) Humkv328'CL: GENE FOR HUMAN RHEUMATOID FACTORS.  
 47) Humka31es'CL: GENE FOR HUMAN RHEUMATOID FACTORS.  
 52) FK-001'CL: IT CAN BE EXPRESSED FUNCTIONALLY IN MOUSE MYELOMA CELLS.

INVARIANT RESIDUES	1 1B9/F2 CL	2 B12 CL	3 G1 CL
-21			
-20	MET	MET	MET
-19		ALA	THR
-18		GLY	CYS
-17		PHE	SE
-16		LEU	PRO
-15		LEU	PRO
-14		LEU	PI
-13		LEU	LEU
-12		THR	THR
-11			
-10		LEU	LEU
-9		LEU	LEU
-8		THR	LEU
-7		HIS	HIS
-6		CYS (.95)	CYS
-5		ALA	THR
-4		GLY	CYS
-3		SER	SER
-2		TRP	TRP
-1		ALA	ALA

OCCURRENCES OF MOST COMMON AMINO ACID

	VARI
-21	
-20	15(MET)
-19	8(THR)
-18	11(TRP)
-17	10(TRP)
-16	17(PRO)
-15	18(LEU)
-14	12(LEU)
-13	12(LEU)
-12	9(THR)
-11	6(THR)
-10	11(LEU)
-9	17(LEU)
-8	7(LEU)
-7	15(HIS)
-6	18(CYS)
-5	15(THR)
-4	15(CYS)
-3	16(SER)
-2	7(+)
-1	9(SER)



## SIGNAL PEPTIDES OF MOUSE

INARIANT RESIDUES	1 CL	2 CL
S107A	17	17

- PRECURSOR OF:
- 1) 1B9/F2' CL: HUMAN LAMBDA LIGHT CHAINS SUBGROUP I
  - 2) BL2' CL: HUMAN LAMBDA LIGHT CHAINS SUBGROUP I
  - 3) 4G12' CL: HUMAN LAMBDA LIGHT CHAINS SUBGROUP I
  - 4) T2:CS' CL: HUMAN LAMBDA LIGHT CHAINS SUBGROUP I
  - 5) T2:CL4' CL: HUMAN LAMBDA LIGHT CHAINS SUBGROUP I
  - 6) Fog-B' CL: HUMAN LAMBDA LIGHT CHAINS SUBGROUP I
  - 7) T1' CL: HUMAN LAMBDA LIGHT CHAINS SUBGROUP I
  - 8) KGB6' CL: HUMAN LAMBDA LIGHT CHAINS SUBGROUP II
  - 9) KAB8' CL: HUMAN LAMBDA LIGHT CHAINS SUBGROUP II
  - 10) KSB8' CL: HUMAN LAMBDA LIGHT CHAINS SUBGROUP II
  - 11) KSG5' CL: HUMAN LAMBDA LIGHT CHAINS SUBGROUP II
  - 12) KSC7' CL: HUMAN LAMBDA LIGHT CHAINS SUBGROUP II
  - 13) KGP5' CL: HUMAN LAMBDA LIGHT CHAINS SUBGROUP II
  - 14) 4A' CL: HUMAN LAMBDA LIGHT CHAINS SUBGROUP II
  - 15) 1B8' CL: HUMAN LAMBDA LIGHT CHAINS SUBGROUP III
  - 16) Pg-1' CL: HUMAN LAMBDA LIGHT CHAINS SUBGROUP III
  - 17) 6H-3C4' CL: HUMAN LAMBDA LIGHT CHAINS SUBGROUP III
  - 18) H6-3C4' CL: HUMAN LAMBDA LIGHT CHAINS SUBGROUP IV
  - 19) LBV' CL: HUMAN LAMBDA LIGHT CHAINS SUBGROUP VI

## REFERENCE: SIGNAL PEPTIDES OF HUMAN LAMBDA LIGHT CHAINS

- 1) 1B9/F2' CL: CARROLL, W.L., YU, M., LINK, M.P. & KORSMEYER, S.J. (1989) J. IMMUNOL., 143, 692-698.
- 2) BL2' CL: TSUJIMOTO, Y. & CROCE, C.M. (1984) NUCL.ACIDS RES., 12, 8407-8414.
- 3) 4G12' CL: KISHIMOTO, T., OKAJIMA, H., OKUMOTO, T. & TANIGUCHI, M. (1989) NUCL.ACIDS RES., 17, 4385.
- 4) T2:CS' CL: BERINSTEIN, N., LEVY, S. & LEVY, R. (1989) SCIENCE, 244, 337-339.
- 5) T2:CL4' CL: BERINSTEIN, N., LEVY, S. & LEVY, R. (1989) SCIENCE, 244, 337-339.
- 6) Fog-B' CL: HUGHES-JONES, N.C., BYE, J.M., BEALE, D. & COADWELL, J. (1990) BIOCHEM.J., 268, 135-140.
- 7) T1' CL: BERINSTEIN, N., LEVY, S. & LEVY, R. (1989) SCIENCE, 244, 337-339.
- 8) KGB6' CL: LEVY, S., MENDEL, E., KON, S., AVNUR, Z. & LEVY, R. (1988) J. EXP. MED., 168, 475-489.
- 9) KAB8' CL: LEVY, S., MENDEL, E., KON, S., AVNUR, Z. & LEVY, R. (1988) J. EXP. MED., 168, 475-489.
- 10) KSB8' CL: LEVY, S., MENDEL, E., KON, S., AVNUR, Z. & LEVY, R. (1988) J. EXP. MED., 168, 475-489.
- 11) KSG5' CL: LEVY, S., MENDEL, E., KON, S., AVNUR, Z. & LEVY, R. (1988) J. EXP. MED., 168, 475-489.
- 12) KSC7' CL: LEVY, S., MENDEL, E., KON, S., AVNUR, Z. & LEVY, R. (1988) J. EXP. MED., 168, 475-489.
- 13) KGP5' CL: LEVY, S., MENDEL, E., KON, S., AVNUR, Z. & LEVY, R. (1988) J. EXP. MED., 168, 475-489.
- 14) 4A' CL: ANDERSON, M.L.M., SZAJNER, M.F., KAPLAN, J.C., MCCOLL, L. & YOUNG, B.D. (1984) NUC.ACIDS RES., 12, 6647-6661. (CHECKED BY AUTHOR 05/16/85)
- 15) 1B8' CL: LARRICK, J.W., DANIELSSON, L., BRENNER, C.A., WALLACE, E.F., ABRAHAMSON, M., FRY, K.E. & BORREBAEK, C.A.K. (1989) BIO/TECH., 7, 934-938.
- 16) Pg-1' CL: HUGHES-JONES, N.C., BYE, J.M., BEALE, D. & COADWELL, J. (1990) BIOCHEM.J., 268, 135-140.
- 17) 6H-3C4' CL: KOMORI, S., YAMASAKI, N., SHIGETA, M., ISOJIMA, S. & WATANABE, T. (1988) CLIN. EXP. IMMUNOL., 71, 508-516.
- 18) H6-3C4' CL: YAMASAKI, N., KOMORI, S. & WATANABE, T. (1987) MOL. IMMUNOL., 24, 981-985. (CHECKED BY AUTHOR 12/12/87)
- 19) LBV' CL: ANDERSON, M.L.M., BROWN, L., MCKENZIE, E., KELLOW, J.E. & YOUNG, B.D. (1985) NUC.ACIDS RES., 13, 8, 2931-2941. (CHECKED BY AUTHOR 08/21/85)

## GENERAL NOTES: SIGNAL PEPTIDES OF HUMAN LAMBDA LIGHT CHAINS

THE NUCLEOTIDE SEQUENCES OF DIFFERENT CLONES CONTAIN AN INTERVENING SEQUENCE OF NONTRANSLATED BASES OF VARYING LENGTHS. THE SPLICING OUT OF THESE INTRONS COULD OCCUR BETWEEN AMINO ACID POSITIONS -5 AND -4, OR -4 AND -3, OR WITHIN POSITION -4. HOWEVER, IF THE SPLICING REQUIRES GT AT THE 5'-END AND AG AT THE 3'-END OF THE INTRON, THIS WOULD DEFINE THE JOINING AS OCCURRING WITHIN THE CODON OF AMINO ACID RESIDUE -4. THE INTRON SIZES OF DIFFERENT SEQUENCES ARE LISTED BELOW:

CLONE:	SOURCE:	INTRON SIZE:	21	22	23
S43' CL	MOUSE MYELOMA CDNA		-29	-29	-29
IG303LAMBDA' CL	MOUSE H2020 MYELOMA DNA	93	-28	-28	-28
IG99LAMBDA' CL	MOUSE EMBRYO DNA	93	-27	-27	-27
WES-IG13' CL	MOUSE EMBRYO DNA	93	-26	-26	-26
MOPC315-26' CL'	MOUSE MYELOMA DNA	93	-25	-25	-25
243' CL	CHICKEN SPLEEN CELL CDNA		-24	-24	-24
			-23	-23	-23
			-22	-22	-22
			-21	-21	-21
			-20	-20	-20
			-19	MET MET MET	MET MET MET
			-18	LYS LYS LYS	LYS LYS LYS
			-17	LEU LEU LEU	LEU LEU LEU
			-16	PRO PRO PRO	PRO PRO PRO
			-15	VAL VAL VAL	VAL VAL VAL
			-14	ARG ARG ARG	ARG ARG ARG
			-13	LEU LEU LEU	LEU LEU LEU
			-12	LEU LEU LEU	LEU LEU LEU
			-11	VAL VAL VAL	VAL VAL VAL
			-10	LEU LEU LEU	LEU LEU LEU
			-9	MET MET MET	MET MET MET
			-8	PHE PHE PHE	PHE PHE PHE
			-7	TRP TRP TRP	TRP TRP TRP
			-6	ILE ILE ILE	ILE ILE ILE
			-5	PRO PRO PRO	PRO PRO PRO
			41	42	43
			CL	CL	CL
			44	K18.1	R9
			CL	CL	CL
			4	4	4

## SPECIFIC NOTES: SIGNAL PEPTIDES OF HUMAN LAMBDA LIGHT CHAINS

- 1) 1B9/F2' CL: FROM A PATIENT WITH B CELL ACUTE LYMPHOCTIC LEUKEMIA WITH CHARACTERISTIC t(8;14) CYTOGENETIC TRANSLOCATION AT DIAGNOSIS.
- 3) 4G12' CL: IT RECOGNIZES A TUMOR-ASSOCIATED AND DIFFERENTIATION ANTIGEN OF MW 195,000.
- 6) Fog-B' CL: THREE-DIMENSIONAL MODEL HAS BEEN CONSTRUCTED FOR THIS ANTIBODY.
- 14) 4A' CL: FROM HUMAN CHROMOSOME 22 (LAMBDA LIGHT CHAIN)
- 16) Pg-1' CL: THREE-DIMENSIONAL MODEL HAS BEEN CONSTRUCTED FOR THIS ANTIBODY.
- 17) 6H-3C4' CL: 6H-3C4 IS AN ESTABLISHED HUMAN-MOUSE HETEROHYBRIDOMA WHICH SECRETES A HUMAN IgM-LAMBDA ANTIBODY. THIS SEQUENCE IS OBTAINED BY LIGATING THE VH REGION WITH HUMAN IgG1 REGION. THE NEW HUMAN IgG1-LAMBDA ANTIBODY FULLY RETAINS THE ORIGINAL SPECIFICITY.

\* THE FOLLOWING WERE EQUALLY AND MOST FREQUENTLY OCCURRING:

AT POSITION	RESIDUES
-2	(TRP, LEU)

-29	---	---	---
-28	---	---	---
-27	---	---	---
-26	---	---	---
-25	---	---	---
-24	---	---	---
-23	---	---	---
-22	---	---	---
-21	---	---	---
-20	---	---	---
-19	MET MET MET	MET MET MET	MET MET MET
-18	LYS LYS LYS	LYS LYS LYS	LYS LYS LYS
-17	LEU LEU LEU	LEU LEU LEU	LEU LEU LEU
-16	PRO PRO PRO	PRO PRO PRO	PRO PRO PRO
-15	VAL VAL VAL	VAL VAL VAL	VAL VAL VAL
-14	ARG ARG ARG	ARG ARG ARG	ARG ARG ARG
-13	LEU LEU LEU	LEU LEU LEU	LEU LEU LEU
-12	LEU LEU LEU	LEU LEU LEU	LEU LEU LEU
-11	VAL VAL VAL	VAL VAL VAL	VAL VAL VAL
-10	LEU LEU LEU	LEU LEU LEU	LEU LEU LEU
-9	MET MET MET	MET MET MET	MET MET MET
-8	PHE PHE PHE	PHE PHE PHE	PHE PHE PHE
-7	TRP TRP TRP	TRP TRP TRP	TRP TRP TRP
-6	ILE ILE ILE	ILE ILE ILE	ILE ILE ILE
-5	PRO PRO PRO	PRO PRO PRO	PRO PRO PRO
41	ALA ALA ALA	ALA ALA ALA	ALA ALA ALA
42	CL	CL	CL
43	K18.1	R9	G1
44	CL	CL	CL
CL	CL	CL	CL
4	4	4	4

-4	ALA ALA ALA	ALA ALA ALA	ALA ALA ALA
-3	SER SER SER	SER SER SER	SER SER SER
-2	SER SER SER	SER SER SER	SER SER SER
-1	SER SER SER	SER SER SER	SER SER SER

TH	V1	S1
GI	GI	SI



SIGNAL PEPTIDES OF MOUSE KAPPA LIGHT CHAINS (cont'd)

## SIGNAL PEPTIDES OF MOU

124 125 126  
C.C58 MRL- E225  
VksEr RF28 'CL  
'CL (VK28) #

-29				
-28				
-27				
-26				
-25				
-24				
-23				
-22				
-21				
-20	MET	MET	MET	MET
-19	LYS	LYS	GLY	GLY
-18	SER	SER	THR	THR
-17	GLN	GLN	HIS	HIS
-16	THR	THR	TYR	TYR
-15	GLN	GLN	GLN	GLN
-14	VAL	VAL	VAL	VAL
-13	PHE	PHE	PHENYL	PHENYL
-12	ILE	ILE	VAL	VAL
-11	PHE	PHE	TYR	TYR
-10	LEU	LEU	ME	ME
-9	LEU	LEU	LEU	LEU
-8	LEU	LEU	LEU	LEU
-7	CYS	CYS	CYS	CYS
-6	VAL	VAL	VAL	VAL
-5	SER	SER	SER	SER
-4	GLY	GLY	GLY	GLY
-3	ALA	ALA	ALA	ALA
-2	HIS	HIS	GLO	GLO
-1	GLY	GLY	GLO	GLO

144 145 1  
14,6b.1 26.4.1 5  
'CL 'CL '

-29			
-28			
-27			
-26			
-25			
-24			
-23			
-22			
-21	ASP		ASP
-20	PHE		PHE
-19	GLN	GLN	
-18	VAL	VAL	
-17	GLN	GLN	
-16	ILE	ILE	
-15	PHE		PHE
-14	SER	SER	
-13	PHE	PHE	
-12	LEU	LEU	
-11	LEU	LEU	
-10	ILE		ILE
-9	SER	SER	
-8	ALA	ALA	
-7	SER	SER	
-6	VAL	VAL	
-5	ILE	ILE	
-4	ILE		ILE
-3	SER	SER	
-2	ARG	ARG	
-1	CYS	CYS	

168 169 170 171  
4C11 567 10.4 30  
'CL 'CL 'CL 'CL

SIGNAL PEPTIDES OF MOUSE KAPPA LIGHT CHAINS (cont'd)

SIGNAL PEPTIDES OF MOUSE ANTIBODIES

## SIGNAL PEPTIDES OF MOUSE KAPPA LIGHT CHAINS (cont'd)

									# OF SEQUENCES	# OF AMINO ACIDS	OCCURRENCES OF MOST COMMON AMINO ACID	VARIABILITY
K2	40-140	191	192	193	194	195	196	197	198	199	4-14.3	
'CL	21'-CL	'CL	'CL	'CL	'CL	'CL	(C <sub>5</sub> H) <sub>5</sub>	S <sub>2</sub> .9	'CL	L	'CL	
-29	---	MST	---	---	---	---	---	6	2	5(MET)	2.4	
-28	---	HIS	---	---	---	---	---	6	1	6(HIS)	1.	
-27	---	GLN	---	---	---	---	---	6	2	5(GLN)	2.4	
-26	---	THR	---	---	---	---	---	7	3	5(THR)	4.5	
-25	---	SER	---	---	---	---	---	7	3	5(SER)	4.2	
-24	---	MET	---	---	---	---	10	3	8(MET)	3.7		
-23	---	GLY	---	---	---	---	11	3	10(GLY)	2.2		
-22	---	ILE	MET	---	MET	---	54	4	43(ILE)	5.		
-21	---	LYS	ASP	MET	---	---	59	5	43(ASP)	6.9		
-20	---	MET	PHE	ASP	---	MET	119	8	75(MET)	13.		
-19	---	ARG	GLU	GLN	ILE	MET	150	11	35(+)	47.		
-18	---	THR	SER	VAL	ARG	PHE	SER	153	13	39(GLN)	51.	
-17	---	PRO	GLN	GLN	SER	PHE	PRO	156	9	62(GLN)	23.	
-16	---	ALA	THR	ILE	VAL	ALA	162	9	46(ILE)	32.		
-15	MET	GLN	LEU	PHE	SER	GLN	167	10	60(GLN)	28.		
-14	TRP	PHE	VAL	SER	SER	PHE	PHE	171	8	45(SER)	30.	
-13	GLY	LEU	ILE	PHE	LEU	PHE	LEU	177	9	94(LEU)	17.	
-12	PRO	GLY	ILE	LEU	ARG	SER	PHE	180	11	80(LEU)	25.	
-11	PHE	ILE	SER	LEU	GLY	PHE	LEU	175	7	82(LEU)	15.	
-10	SER	LEU	ILE	ILE	LEU	LEU	LEU	180	8	117(LEU)	12.	
-9	HIS	LEU	LEU	SER	LEU	VAL	VAL	182	10	85(LEU)	21.	
-8	PHE	LEU	CUV	ALA	CYS	MET	LEU	183	11	74(LEU)	27.	
-7	SER	TRP	CVS	SER	LEU	SER	TRP	183	9	101(TRP)	16.	
-6	ILE	PHE	LEU	VAL	PRO	ILE	ILE	186	9	86(VAL)	19.	
-5	VAL	PRO	TYR	ILE	VAL	PRO	SER	190	13	71(PRO)	35.	
-4	GLY	GLY	GLY	ILE	MET	SER	VAL	GLU	189	12	95(GLY)	24.
-3	ALA	ILE	ALA	SER	SER	TRP	ALA	THR	189	8	98(SER)	15.
-2	ARG	LYS	ASP	ARG	ARG	PRO	ASN	ASN	190	13	75(ARG)	33.
-1	CYS	CYS	GLY	GLY	GLY	ARG	GLY	GLY	194	7	121(GLY)	11.

## PRECURSOR OF:

- 1) S107A'CL: MOUSE KAPPA I
- 2) 17/9'CL: MOUSE KAPPA LI
- 3) 198.5C2'CL: MOUSE KAPPA
- 4) 198.3D3'CL: MOUSE KAPPA
- 5) 198.5C8'CL: MOUSE KAPPA
- 6) 198.4D9'CL: MOUSE KAPPA
- 7) 180.2G6'CL: MOUSE KAPPA
- 8) 180.6D10'CL: MOUSE KAPPA
- 9) GA4'CL: MOUSE KAPPA LI
- 10) D23'CL: MOUSE KAPPA LI
- 11) 180.7C9'CL: MOUSE KAPPA
- 12) 180.5G4'CL: MOUSE KAPPA
- 13) TF5-139'CL: MOUSE KAPPA
- 14) 160.2B2'CL: MOUSE KAPPA
- 15) F6-3'CL: MOUSE KAPPA L
- 16) B13H4C8'CL: MOUSE KAPPA
- 17) MBr1'CL: MOUSE KAPPA L
- 18) MRL-DNA10'CL: MOUSE KA
- 19) K5.1'CL: MOUSE KAPPA L
- 20) BC-1004'CL: MOUSE KAPPA
- 21) B003+46/207'CL: MOUSE
- 22) L XIX 27'CL: MOUSE KAPPA
- 23) 10-25'CL: MOUSE KAPPA
- 24) 5-14'CL: MOUSE KAPPA I
- 25) 9-40'CL: MOUSE KAPPA I
- 26) 12-40'CL: MOUSE KAPPA
- 27) 3-13'CL: MOUSE KAPPA I
- 28) IdB5.7'CL: MOUSE KAPPA
- 29) vk-1A'CL: MOUSE KAPPA
- 30) MOPC-460'CL: MOUSE KAPPA
- 31) vk-1C8'CL: MOUSE KAPPA
- 32) vk-1B'CL: MOUSE KAPPA
- 33) 4-4-20'CL: MOUSE KAPPA
- 34) 3-24'CL: MOUSE KAPPA
- 35) MRL-4'CL: MOUSE KAPPA
- 36) 17C1'CL: MOUSE KAPPA
- 37) 14C3'CL: MOUSE KAPPA
- 38) K1A8'CL: MOUSE KAPPA
- 39) vk-1C'CL: MOUSE KAPPA
- 40) v16-19'CL: MOUSE KAPPA
- 41) Gf8'CL: MOUSE KAPPA L
- 42) 4D4'CL: MOUSE KAPPA L
- 43) K1B.1'CL: MOUSE KAPPA
- 44) RP93'CL: MOUSE KAPPA
- 45) 17G5'CL: MOUSE KAPPA
- 46) 36.5.7B'CL: MOUSE KAPPA
- 47) W3129'CL: MOUSE KAPPA
- 48) 42.4B.12.2'CL: MOUSE
- 49) 42.7B3.2'CL: MOUSE KA
- 50) BXW-14'CL: MOUSE KAPPA
- 51) PaVK24B'CL: MOUSE KAPPA
- 52) VKAPPA 24B'CL: MOUSE
- 53) VR-25-39'CL: MOUSE KA
- 54) VR-25-47'CL: MOUSE KA
- 55) PaVK24.2'CL: MOUSE KA
- 56) PaVK24.1'CL: MOUSE KA
- 57) PaVK24A'CL: MOUSE KAPPA
- 58) PaVK24C'CL: MOUSE KAPPA
- 59) MOPC167'CL: MOUSE KAPPA
- 60) VKAPPA167'CL: MOUSE KAPPA
- 61) VKAPPA 24X'CL: MOUSE
- 62) MPC11'CL: MOUSE KAPPA
- 63) MOPC321: MOUSE KAPPA
- 64) 2.7.1G.10'CL: MOUSE KAPPA
- 65) VR-21G'CL: MOUSE KAPPA
- 66) VR-21M'CL: MOUSE KAPPA
- 67) 05'CL: MOUSE KAPPA LI
- 68) 11'CL: MOUSE KAPPA LI
- 69) 12'CL: MOUSE KAPPA LI
- 70) 4.3.6F8'CL: MOUSE KAPPA
- 71) MOPC63: MOUSE KAPPA L
- 72) 13'CL: MOUSE KAPPA LI
- 73) 30'CL: MOUSE KAPPA LI
- 74) 2B2'CL: MOUSE KAPPA L
- 75) 12C4'CL: MOUSE KAPPA
- 76) MRL-Histone7'CL: MOU
- 77) 7B6'CL: MOUSE KAPPA L
- 78) MRL-22'CL: MOUSE KAPPA
- 79) VABE8'CL: MOUSE KAPPA
- 80) 18-2-3'CL: MOUSE KAPPA
- 81) SD3'CL: MOUSE KAPPA L
- 82) 6G11'CL: MOUSE KAPPA
- 83) 37A4'CL: MOUSE KAPPA
- 84) TSC'CL: MOUSE KAPPA I
- 85) LB'CL: MOUSE KAPPA LI
- 86) S107B'CL: MOUSE KAPPA
- 87) TZE(1)'CL: MOUSE KAPPA
- 88) 3BCV3'CL: MOUSE KAPPA
- 89) 3BCV4'CL: MOUSE KAPPA
- 90) V-K10 ARS-A'CL: MOUSE
- 91) AC-1001'CL: MOUSE KAPPA
- 92) 7F11'CL: MOUSE KAPPA
- 93) 2H1'CL: MOUSE KAPPA L
- 94) H12'CL: MOUSE KAPPA I
- 95) 5-27'CL: MOUSE KAPPA
- 96) 18C10'CL: MOUSE KAPPA
- 97) 3BC13'CL: MOUSE KAPPA
- 98) 3BC'CL: MOUSE KAPPA L
- 99) PC613'CL: MOUSE KAPPA
- 100) 3BC13V'CL: MOUSE KAPPA
- 101) MOPC173B'CL: MOUSE KA
- 102) TI'CL: MOUSE KAPPA LI
- 103) K2A'CL: MOUSE KAPPA I

## PRECURSOR OF:

- 1) S107A'CL: MOUSE KAPPA LIGHT CHAINS I
- 2) 17.9'CL: MOUSE KAPPA LIGHT CHAINS I
- 3) 198.5C2'CL: MOUSE KAPPA LIGHT CHAINS I
- 4) 198.3D3'CL: MOUSE KAPPA LIGHT CHAINS I
- 5) 198.5C8'CL: MOUSE KAPPA LIGHT CHAINS I
- 6) 198.4D9'CL: MOUSE KAPPA LIGHT CHAINS I
- 7) 180.2G6'CL: MOUSE KAPPA LIGHT CHAINS I
- 8) 180.6D10'CL: MOUSE KAPPA LIGHT CHAINS I
- 9) 6A4'CL: MOUSE KAPPA LIGHT CHAINS I
- 10) D23'CL: MOUSE KAPPA LIGHT CHAINS I
- 11) 180.7C9'CL: MOUSE KAPPA LIGHT CHAINS I
- 12) 180.5G4'CL: MOUSE KAPPA LIGHT CHAINS I
- 13) TFS-139'CL: MOUSE KAPPA LIGHT CHAINS I
- 14) 180.2B2'CL: MOUSE KAPPA LIGHT CHAINS I
- 15) F6-3'CL: MOUSE KAPPA LIGHT CHAINS I
- 16) B13H4C8'CL: MOUSE KAPPA LIGHT CHAINS I
- 17) MBx1'CL: MOUSE KAPPA LIGHT CHAINS I
- 18) MRL-DNA10'CL: MOUSE KAPPA LIGHT CHAINS II
- 19) K5.1'CL: MOUSE KAPPA LIGHT CHAINS II
- 20) BC-1004'CL: MOUSE KAPPA LIGHT CHAINS II
- 21) B003-46/2D7'CL: MOUSE KAPPA LIGHT CHAINS II
- 22) L XII-27'CL: MOUSE KAPPA LIGHT CHAINS II
- 23) 10-25'CL: MOUSE KAPPA LIGHT CHAINS II
- 24) 5-14'CL: MOUSE KAPPA LIGHT CHAINS II
- 25) 9-40'CL: MOUSE KAPPA LIGHT CHAINS II
- 26) 12-40'CL: MOUSE KAPPA LIGHT CHAINS II
- 27) 3-13'CL: MOUSE KAPPA LIGHT CHAINS II
- 28) 1d85.7'CL: MOUSE KAPPA LIGHT CHAINS II
- 29) vk-1A'CL: MOUSE KAPPA LIGHT CHAINS II
- 30) MOPC-460'CL: MOUSE KAPPA LIGHT CHAINS II
- 31) vk-1C'CL: MOUSE KAPPA LIGHT CHAINS II
- 32) vk-1B'CL: MOUSE KAPPA LIGHT CHAINS II
- 33) 4-4-20'CL: MOUSE KAPPA LIGHT CHAINS II
- 34) 3-24'CL: MOUSE KAPPA LIGHT CHAINS II
- 35) MRL-4'CL: MOUSE KAPPA LIGHT CHAINS II
- 36) 17C1'CL: MOUSE KAPPA LIGHT CHAINS II
- 37) 14C3'CL: MOUSE KAPPA LIGHT CHAINS II
- 38) K1A5'CL: MOUSE KAPPA LIGHT CHAINS II
- 39) vk-1C'CL: MOUSE KAPPA LIGHT CHAINS II
- 40) v16-19'CL: MOUSE KAPPA LIGHT CHAINS II
- 41) GF8'CL: MOUSE KAPPA LIGHT CHAINS II
- 42) 4D4'CL: MOUSE KAPPA LIGHT CHAINS II
- 43) K18.1'CL: MOUSE KAPPA LIGHT CHAINS II
- 44) RP93'CL: MOUSE KAPPA LIGHT CHAINS II
- 45) 17G5'CL: MOUSE KAPPA LIGHT CHAINS II
- 46) 36.5.JB'CL: MOUSE KAPPA LIGHT CHAINS II
- 47) W3129'CL: MOUSE KAPPA LIGHT CHAINS II
- 48) 42.4B.12.2'CL: MOUSE KAPPA LIGHT CHAINS II
- 49) 42.7B3.2'CL: MOUSE KAPPA LIGHT CHAINS II
- 50) BXW-14'CL: MOUSE KAPPA LIGHT CHAINS II
- 51) PAVE24B'CL: MOUSE KAPPA LIGHT CHAINS II
- 52) VKAPPA 24B'CL: MOUSE KAPPA LIGHT CHAINS II
- 53) VK-25-39'CL: MOUSE KAPPA LIGHT CHAINS II
- 54) VK-25-47'CL: MOUSE KAPPA LIGHT CHAINS II
- 55) PaVK24.2'CL: MOUSE KAPPA LIGHT CHAINS II
- 56) PaVK24.1'CL: MOUSE KAPPA LIGHT CHAINS II
- 57) PaVK24A'CL: MOUSE KAPPA LIGHT CHAINS II
- 58) PaVK24C'CL: MOUSE KAPPA LIGHT CHAINS II
- 59) MOPC167'CL: MOUSE KAPPA LIGHT CHAINS II
- 60) VKAPPAL67'CL: MOUSE KAPPA LIGHT CHAINS II
- 61) VKAPPA 24A'CL: MOUSE KAPPA LIGHT CHAINS II
- 62) MPC11'CL: MOUSE KAPPA LIGHT CHAINS III
- 63) MOPC321: MOUSE KAPPA LIGHT CHAINS III
- 64) 2.7.1G.10'CL: MOUSE KAPPA LIGHT CHAINS III
- 65) VK-21G'CL: MOUSE KAPPA LIGHT CHAINS III
- 66) VK-21A'CL: MOUSE KAPPA LIGHT CHAINS III
- 67) 05'CL: MOUSE KAPPA LIGHT CHAINS III
- 68) 11'CL: MOUSE KAPPA LIGHT CHAINS III
- 69) 12'CL: MOUSE KAPPA LIGHT CHAINS III
- 70) 4.3.GF8'CL: MOUSE KAPPA LIGHT CHAINS III
- 71) MOPC63: MOUSE KAPPA LIGHT CHAINS III
- 72) 13'CL: MOUSE KAPPA LIGHT CHAINS III
- 73) 30'CL: MOUSE KAPPA LIGHT CHAINS III
- 74) 2B2'CL: MOUSE KAPPA LIGHT CHAINS IV
- 75) 12C4'CL: MOUSE KAPPA LIGHT CHAINS IV
- 76) MRL-Histone7'CL: MOUSE KAPPA LIGHT CHAINS IV
- 77) 7B6'CL: MOUSE KAPPA LIGHT CHAINS IV
- 78) MRL-22'CL: MOUSE KAPPA LIGHT CHAINS IV
- 79) VABE8'CL: MOUSE KAPPA LIGHT CHAINS IV
- 80) 1B-2-3'CL: MOUSE KAPPA LIGHT CHAINS IV
- 81) 5D3'CL: MOUSE KAPPA LIGHT CHAINS IV
- 82) 6G11'CL: MOUSE KAPPA LIGHT CHAINS IV
- 83) 37A4'CL: MOUSE KAPPA LIGHT CHAINS IV
- 84) T3C'CL: MOUSE KAPPA LIGHT CHAINS IV
- 85) LB'CL: MOUSE KAPPA LIGHT CHAINS IV
- 86) S107B'CL: MOUSE KAPPA LIGHT CHAINS IV
- 87) TZK(1)'CL: MOUSE KAPPA LIGHT CHAINS IV
- 88) 38CV3'CL: MOUSE KAPPA LIGHT CHAINS IV
- 89) 38CV4'CL: MOUSE KAPPA LIGHT CHAINS IV
- 90) V-K10 ARB-A'CL: MOUSE KAPPA LIGHT CHAINS V
- 91) AC-1001'CL: MOUSE KAPPA LIGHT CHAINS V
- 92) 7F11'CL: MOUSE KAPPA LIGHT CHAINS V
- 93) 2H1'CL: MOUSE KAPPA LIGHT CHAINS V
- 94) H12'CL: MOUSE KAPPA LIGHT CHAINS V
- 95) 5-27'CL: MOUSE KAPPA LIGHT CHAINS V
- 96) 18C10'CL: MOUSE KAPPA LIGHT CHAINS V
- 97) 38C13'CL: MOUSE KAPPA LIGHT CHAINS V
- 98) 38C'CL: MOUSE KAPPA LIGHT CHAINS V
- 99) PC613'CL: MOUSE KAPPA LIGHT CHAINS V
- 100) 38C13V'CL: MOUSE KAPPA LIGHT CHAINS V
- 101) MOPC173B'CL: MOUSE KAPPA LIGHT CHAINS V
- 102) T1'CL: MOUSE KAPPA LIGHT CHAINS V
- 103) K2A'CL: MOUSE KAPPA LIGHT CHAINS V

## PRECURSOR OF: (cont'd)

- 104) RPT2' CL: MOUSE KAPPA LIGHT CHAINS V  
 105) Lym-1' CL: MOUSE KAPPA LIGHT CHAINS V  
 106) VK33' CL: MOUSE KAPPA LIGHT CHAINS V  
 107) 10.2.8' CL: MOUSE KAPPA LIGHT CHAINS V  
 108) VT1/B' CL: MOUSE KAPPA LIGHT CHAINS V  
 109) LG' CL: MOUSE KAPPA LIGHT CHAINS V  
 110) 2-2G4' CL: MOUSE KAPPA LIGHT CHAINS V  
 111) 2-2C8' CL: MOUSE KAPPA LIGHT CHAINS V  
 112) B16.2K1' CL: MOUSE KAPPA LIGHT CHAINS V  
 113) UN34.11' CL: MOUSE KAPPA LIGHT CHAINS V  
 114) C.AKR' CL: MOUSE KAPPA LIGHT CHAINS V  
 115) SF/CamE1' CL: MOUSE KAPPA LIGHT CHAINS V  
 116) PTRA/E1' CL: MOUSE KAPPA LIGHT CHAINS V  
 117) 4.2.6D12' CL: MOUSE KAPPA LIGHT CHAINS V  
 118) SK/CamRk' CL: MOUSE KAPPA LIGHT CHAINS V  
 119) CB.5V' CL: MOUSE KAPPA LIGHT CHAINS V  
 120) UN42.5' CL: MOUSE KAPPA LIGHT CHAINS V  
 121) BXW-16' CL: MOUSE KAPPA LIGHT CHAINS V  
 122) K3' CL: MOUSE KAPPA LIGHT CHAINS V  
 123) C.C58 M75' CL: MOUSE KAPPA LIGHT CHAINS V  
 124) C.C58 VκSe1' CL: MOUSE KAPPA LIGHT CHAINS V  
 125) MRL-RP28(VK28)' CL: MOUSE KAPPA LIGHT CHAINS V  
 126) E225' CL: MOUSE KAPPA LIGHT CHAINS V  
 127) MPC11: MOUSE KAPPA LIGHT CHAINS V  
 128) A003=40/5G7' CL: MOUSE KAPPA LIGHT CHAINS V  
 129) CEA 66-E3' CL: MOUSE KAPPA LIGHT CHAINS V  
 130) VTRP' CL: MOUSE KAPPA LIGHT CHAINS V  
 131) CEM231.6.7' CL: MOUSE KAPPA LIGHT CHAINS V  
 132) BALB/cVκSe1' CL: MOUSE KAPPA LIGHT CHAINS V  
 133) B6.2' CL: MOUSE KAPPA LIGHT CHAINS V  
 134) MPC21: MOUSE KAPPA LIGHT CHAINS V  
 135) 17-1A' CL: MOUSE KAPPA LIGHT CHAINS V  
 136) E7' CL: MOUSE KAPPA LIGHT CHAINS V  
 137) MRL-RP24' CL: MOUSE KAPPA LIGHT CHAINS V  
 138) L7' CL: MOUSE KAPPA LIGHT CHAINS V  
 139) T2' CL: MOUSE KAPPA LIGHT CHAINS V  
 140) 87.92.6' CL: MOUSE KAPPA LIGHT CHAINS V  
 141) 45.21.1' CL: MOUSE KAPPA LIGHT CHAINS VI  
 142) 10C11' CL: MOUSE KAPPA LIGHT CHAINS VI  
 143) 18G8' CL: MOUSE KAPPA LIGHT CHAINS VI  
 144) 14.6b.1' CL: MOUSE KAPPA LIGHT CHAINS VI  
 145) 26.4.1' CL: MOUSE KAPPA LIGHT CHAINS VI  
 146) 5G11' CL: MOUSE KAPPA LIGHT CHAINS VI  
 147) 14B4' CL: MOUSE KAPPA LIGHT CHAINS VI  
 148) 58.2C.10.3' CL: MOUSE KAPPA LIGHT CHAINS VI  
 149) 6B10' CL: MOUSE KAPPA LIGHT CHAINS VI  
 150) 4F10' CL: MOUSE KAPPA LIGHT CHAINS VI  
 151) 6F6' CL: MOUSE KAPPA LIGHT CHAINS VI  
 152) 7C6' CL: MOUSE KAPPA LIGHT CHAINS VI  
 153) 8E3' CL: MOUSE KAPPA LIGHT CHAINS VI  
 154) H26' CL: MOUSE KAPPA LIGHT CHAINS VI  
 155) 3P2' CL: MOUSE KAPPA LIGHT CHAINS VI  
 156) 12G10' CL: MOUSE KAPPA LIGHT CHAINS VI  
 157) 10G10' CL: MOUSE KAPPA LIGHT CHAINS VI  
 158) 3E3' CL: MOUSE KAPPA LIGHT CHAINS VI  
 159) 13D4' CL: MOUSE KAPPA LIGHT CHAINS VI  
 160) 9G6' CL: MOUSE KAPPA LIGHT CHAINS VI  
 161) 3B6' CL: MOUSE KAPPA LIGHT CHAINS VI  
 162) 11G3' CL: MOUSE KAPPA LIGHT CHAINS VI  
 163) 564' CL: MOUSE KAPPA LIGHT CHAINS VI  
 164) 550' CL: MOUSE KAPPA LIGHT CHAINS VI  
 165) 563' CL: MOUSE KAPPA LIGHT CHAINS VI  
 166) 42.554.2' CL: MOUSE KAPPA LIGHT CHAINS VI  
 167) 37.185.2' CL: MOUSE KAPPA LIGHT CHAINS VI  
 168) 4C11' CL: MOUSE KAPPA LIGHT CHAINS VI  
 169) 557' CL: MOUSE KAPPA LIGHT CHAINS VI  
 170) 10.4' CL: MOUSE KAPPA LIGHT CHAINS VI  
 171) 3C5' CL: MOUSE KAPPA LIGHT CHAINS VI  
 172) 5G2' CL: MOUSE KAPPA LIGHT CHAINS VI  
 173) 70Z/3' CL: MOUSE KAPPA LIGHT CHAINS VI  
 174) 2R7' CL: MOUSE KAPPA LIGHT CHAINS VI  
 175) L6' CL: MOUSE KAPPA LIGHT CHAINS VI  
 176) 2C7' CL: MOUSE KAPPA LIGHT CHAINS VI  
 177) 38CV1' CL: MOUSE KAPPA LIGHT CHAINS VI  
 160) MPC11C: MOUSE KAPPA LIGHT CHAIN OF A VARIANT PROTEIN MADE BY CLONED MPC11 WITH THE VARIABLE REGION DELETED  
 166) 91A3' CL: MOUSE KAPPA LIGHT CHAIN  
 187) MPC41' CL: MOUSE KAPPA LIGHT CHAIN  
 188) MPC41A: MOUSE KAPPA LIGHT CHAIN OF MPC41 (2 DIFFERENT PRECURSORS)  
 189) MPC41B: MOUSE KAPPA LIGHT CHAIN OF MPC41 (2 DIFFERENT PRECURSORS)  
 190) K2' CL: MOUSE KAPPA LIGHT CHAIN OF K2' CL  
 191) 40-140' CL: MOUSE KAPPA LIGHT CHAIN  
 192) MPC21' CL: MOUSE KAPPA LIGHT CHAIN  
 193) 19.22.1' CL: MOUSE KAPPA LIGHT CHAIN

## REFERENCE: SIGNAL PEPTIDES OF MOUSE KAPPA LIGHT CHAINS

- 1) S107A' CL: KWAN, S.P., RUDIKOFF, S., SEIDMAN, J.G., LEDER, P. & SCHARFF, M.D. (1981) J. EXP. MED., 153, 1365-1370.  
 2) 17/9' CL: SCHULZE-GAHMEN, U., RINI, J.M., AREVALO, J., STURA, E., KENTEN, J.H. & WILSON, I.A. (1988) J. BIOL. CHEM., 263, 17100-17106.  
 3) 198.5C2' CL: CLAFLIN, J.L., BERRY, J., FLAHERTY, D. & DUNNICK, W. (1987) J. IMMUNOL., 138, 3060-3068.  
 4) 198.3D3' CL: CLAFLIN, J.L., BERRY, J., FLAHERTY, D. & DUNNICK, W. (1987) J. IMMUNOL., 138, 3060-3068.  
 5) 198.5C8' CL: CLAFLIN, J.L., BERRY, J., FLAHERTY, D. & DUNNICK, W. (1987) J. IMMUNOL., 138, 3060-3068.  
 6) 198.4D9' CL: CLAFLIN, J.L., BERRY, J., FLAHERTY, D. & DUNNICK, W. (1987) J. IMMUNOL., 138, 3060-3068.  
 7) 180.2G6' CL: CLAFLIN, J.L., BERRY, J., FLAHERTY, D. & DUNNICK, W. (1987) J. IMMUNOL., 138, 3060-3068.  
 8) 180.6D10' CL: CLAFLIN, J.L., BERRY, J., FLAHERTY, D. & DUNNICK, W. (1987) J. IMMUNOL., 138, 3060-3068.  
 9) 6A4' CL: MARGET, M., ECKHARDT, A., EHRET, W., VON SPECHT, B.-U., DUCHENE, M. & DOMDEY, H. (1988) GENE, 74, 335-345.  
 10) D23' CL: BACCALA, R., QUANG, T.V., GILBERT, M., TERNYNCK, T. & AVRAMEAS, S. (1989) PROC. NATL. ACAD. SCI. USA, 86, 4624-4628.  
 11) 180.7C9' CL: CLAFLIN, J.L., BERRY, J., FLAHERTY, D. & DUNNICK, W. (1987) J. IMMUNOL., 138, 3060-3068.  
 12) 180.5G4' CL: CLAFLIN, J.L., BERRY, J., FLAHERTY, D. & DUNNICK, W. (1987) J. IMMUNOL., 138, 3060-3068.  
 13) TFS-139' CL: RILEY, S.C., CONNORS, S.J., KLINNAN, N.R. & OGATA, R.T. (1986) PROC. NATL. ACAD. SCI. USA, 83, 2589-2593. (CHECKED BY AUTHOR 08/19/87)  
 14) 180.2B2' CL: CLAFLIN, J.L., BERRY, J., FLAHERTY, D. & DUNNICK, W. (1987) J. IMMUNOL., 138, 3060-3068.  
 15) F6-3' CL: CHENG, H.-L., SOOD, A.K., WARD, R.E., KIEBER-EMMONS, T. & KOHLER, H. (1988) MOL. IMMUNOL., 25, 33-40.  
 16) B13H4C8' CL: OKAMOTO, M. & HONJO, T. (1990) NUCL. ACIDS RES., 18, 1895.

## REFERENCE: SIGNAL PEPTIDE

- 17) MBrl' CL: ORLANDI, R., GUSS  
 18) MRL-DNA10' CL: KOFLER, R., STR  
 19) K5.1' CL: CORBET, S., MILI  
 20) BC-1004' CL: CHEN, H.-T.  
 21) B003=46/2D7' CL: CHEN, H.-  
 22) L XIX 27' CL: SCHIFF, C.,  
 23) 10-25' CL: BEDZYK, W.D., HI  
 24) 5-14' CL: BEDZYK, W.D., HEI  
 25) 9-40' CL: BEDZYK, W.D., HEI  
 26) 12-40' CL: BEDZYK, W.D., HI  
 27) 3-13' CL: BEDZYK, W.D., HEI  
 28) IDB5.7' CL: PERFETTI, V.,  
 29) vκ-1A' CL: NG, K.H., LAVIG  
 30) MOPC-450' CL: NG, K.H., LA  
 31) vκ-1C' CL: NG, K.H., LAVIG  
 32) vκ-1B' CL: NG, K.H., LAVIG  
 33) 4-4-20' CL: BEDZYK, W.D.,  
 34) 3-24' CL: BEDZYK, W.D., HE  
 35) MRL-4' CL: KOFLER, R., STR  
 36) 17C1' CL: NAHMIA, C., STR  
 37) 14C3' CL: NAHMIA, C., STR  
 38) K1a5' CL: CORBET, S., MILI  
 39) vκ-1C' CL: NG, K.H., LAVIG  
 40) v16-19' CL: REININGER, L.  
 10038-10042.  
 41) 6F8' CL: KAARTINEN, M., PI  
 42) 4D4' CL: KAARTINEN, M., PI  
 43) K18.1' CL: CORBET, S., MI  
 44) RP93' CL: CHIEN, N.C., PO  
 45) 17G5' CL: KAARTINEN, M.  
 46) 36.5.7B' CL: WANG, D., LI  
 47) W3129' CL: BORDEN, P.,  
 48) 42.4B.12.2' CL: AKOLKAR  
 J. IMMUNOL., 138  
 49) 42.7B3.2' CL: WANG, D., LI  
 50) BXW-14' CL: KOFLER, R., S  
 51) PaVK24B' CL: JOUVIN-MAR  
 52) VKAPPA 24B' CL: JOHO, R.  
 53) VK-25-39' CL: LUTZ, C.T.  
 54) VK-25-47' CL: LUTZ, C.T.  
 55) PaVK24.2' CL: JOUVIN-MA  
 56) PaVK24.1' CL: JOUVIN-MA  
 57) PaVK24A' CL: JOUVIN-MAR  
 58) PaVK24C' CL: JOUVIN-MAR  
 59) MOPC167' CL: JOHO, R., WE  
 60) VKAPPA167' CL: SELSING,  
 NEISSMAN, J.  
 PROC. NATL. ACAD.  
 61) VKAPPA 24A' CL: JOHO, R.  
 62) MPC11' CL: SEIDMAN, J.G.,  
 MORRISON, S.L.  
 63) MPC321: SCHECHTER, I.  
 BIOCHEMISTRY, 1  
 64) 2.7.1G.10' CL: KOGA, H.  
 65) VK-21G' CL: ALANEN, A.  
 66) VK-21A' CL: ALANEN, A.  
 67) 05' CL: O'KEEFE, T.L., BA  
 68) 11' CL: O'KEEFE, T.L., BA  
 69) 12' CL: O'KEEFE, T.L., BA  
 70) 4.3.6F8' CL: WANG, D., LI  
 71) MOPC63: BURSTEIN, Y.  
 2392-2400. (K  
 72) 13' CL: O'KEEFE, T.L., BA  
 73) 30' CL: O'KEEFE, T.L., BA  
 74) 2B2' CL: KAARTINEN, M.  
 75) 12C4' CL: KAARTINEN, M.  
 76) MRL-Histone, CL: KOFL  
 EUR. J. IMMUNOL.  
 77) 7B6' CL: KAARTINEN, M.  
 78) MRL-22' CL: KOFLER, R.  
 (1988) J. CLIN.  
 79) VABE8' CL: SELSING, E.  
 80) 18-2-3' CL: DOMBRINK-K  
 4513-4522.  
 81) 5D5' CL: KAARTINEN, M.  
 82) GC11' CL: KAARTINEN, M.  
 83) 37A4' CL: NAHMIA, C., S  
 84) T3C' CL: ROTH, M.S., WEI  
 J. IMMUNOL., 14  
 85) L8' CL: HOECHTL, J., MUE  
 86) S107B' CL: KWAN, S.P., M  
 87) T2B(1)' CL: ROTH, M.S.,  
 J. IMMUNOL., 14  
 88) 38CV3' CL: CARROLL, W.L  
 89) 38CV4' CL: CARROLL, W.L  
 90) V-K10 ARS-A' CL: SANZ,  
 91) AC-1001' CL: CHEN, H.-T  
 92) TFI1' CL: KAARTINEN, M.  
 93) ZB1' CL: LI, Y.-W., LAW  
 94) B12' CL: BEDZYK, W.D.,  
 95) 5-27' CL: BEDZYK, W.D.,  
 96) 18C10' CL: KAARTINEN, M  
 MAEKA, O. (19  
 97) 38C13' CL: CAMPBELL, M.  
 98) 38C' CL: CARROLL, W.L.  
 99) PC613' CL: FEEDERSEN, I  
 100) 38C13V' CL: ROTH, M.S.,  
 J. IMMUNOL., 14  
 101) MOPC173B' CL: MAX, E.E.  
 102) T1' CL: ALTENBURGER, W.  
 103) K2A' CL: NISHIOKA, Y. (1

## REFERENCE: SIGNAL PEPTIDES OF MOUSE KAPPA LIGHT CHAINS (cont'd)

- 17) MBL'CL: ORLANDI,R., GUSSOM,D.H., JONES,P.T. & WINTER,G. (1989) PROC.NATL.ACAD.SCI.USA, 86, 3833-3837.
- 18) MRL-DNA10'CL: KOFLER,R., NOONAN,D.J., LEVY,D.E., WILSON,M.C., MOLLER,N.P.H., DIXON,F.J. & THEOFILOPOULOS,A.N. (1985) J. EXP. MED., 161, 805-815; KOFLER,R., NOONAN,D.J., STROHAL,R., BALDERAS,R.S., MOLLER,N.P.H., DIXON,F.J. & THEOFILOPOULOS,A.N. (1987) EUR.J. IMMUNOL., 17, 91-95. (CHECKED BY AUTHOR 06/23/87)
- 19) K5.1'CL: CORBET,S., MILILI,M., FOUGEREAU,M. & SCHIFF,C. (1987) J. IMMUNOL., 138, 932-939.
- 20) BC-1004'CL: CHEN,H.-T., KABAT,E.A., LUNDBLAD,A. & RATCLIFFE,R.M. (1987) J. BIOL.CHEM., 262, 13579-13583.
- 21) B003+46/2D7'CL: CHEN,H.-T., KABAT,E.A., LUNDBLAD,A. & RATCLIFFE,R.M. (1987) J. BIOL.CHEM., 262, 13579-13583.
- 22) L XIX 27'CL: SCHIFF,C., CORBET,S., MILILI,M. & FOUGEREAU,M. (1983) EMBO J., 2, 1771-1776.
- 23) 10-25'CL: BEDZYK,W.D., HERRON,J.N., EDMUNDSON,A.B. & VOSS,E.W.,JR. (1990) J. BIOL.CHEM., 265, 133-138.
- 24) 5-14'CL: BEDZYK,W.D., HERRON,J.N., EDMUNDSON,A.B. & VOSS,E.W.,JR. (1990) J. BIOL.CHEM., 265, 133-138.
- 25) 9-40'CL: BEDZYK,W.D., HERRON,J.N., EDMUNDSON,A.B. & VOSS,E.W.,JR. (1990) J. BIOL.CHEM., 265, 133-138.
- 26) 12-40'CL: BEDZYK,W.D., HERRON,J.N., EDMUNDSON,A.B. & VOSS,E.W.,JR. (1990) J. BIOL.CHEM., 265, 133-138.
- 27) 3-13'CL: BEDZYK,W.D., HERRON,J.N., EDMUNDSON,A.B. & VOSS,E.W.,JR. (1990) J. BIOL.CHEM., 265, 133-138.
- 28) IDRS.7'CL: PERFETTI,V., BORDEN,P., TAO,M.-H., MORRISON,S.L. & KABAT,E.A. (1991) MOL. IMMUNOL., 28, 505-515.
- 29) VK-1A'CL: NG,K.H., LAVIGUEUR,A., RICARD,L., BOIVRETTTE,M., MACLEAN,S., CLOUTIER,D. & GIBSON,D.M. (1989) J. IMMUNOL., 143, 638-648.
- 30) MOPC-460'CL: NG,K.H., LAVIGUEUR,A., RICARD,L., BOIVRETTTE,M., MACLEAN,S., CLOUTIER,D. & GIBSON,D.M. (1989) J. IMMUNOL., 143, 638-648.
- 31) VK-1C'CL: NG,K.H., LAVIGUEUR,A., RICARD,L., BOIVRETTTE,M., MACLEAN,S., CLOUTIER,D. & GIBSON,D.M. (1989) J. IMMUNOL., 143, 638-648.
- 32) VK-1B'CL: NG,K.H., LAVIGUEUR,A., RICARD,L., BOIVRETTTE,M., MACLEAN,S., CLOUTIER,D. & GIBSON,D.M. (1989) J. IMMUNOL., 143, 638-648.
- 33) 4-4-20'CL: BEDZYK,W.D., HERRON,J.N., EDMUNDSON,A.B. & VOSS,E.W.,JR. (1990) J. BIOL.CHEM., 265, 133-138.
- 34) 3-24'CL: BEDZYK,W.D., HERRON,J.N., EDMUNDSON,A.B. & VOSS,E.W.,JR. (1990) J. BIOL.CHEM., 265, 133-138.
- 35) MRL-4'CL: KOFLER,R., STROHAL,R., BALDERAS,R.S., JOHNSON,M.E., NOONAN,D.J., DUCHOSAL,M.A., DIXON,F.J. & THEOFILOPOULOS,A.N. (1988) J. CLIN. INVEST., 82, 852-860.
- 36) 17C1'CL: NAHMIAZ,C., STROSBERG,A.D. & EMORINE,L.J. (1988) J. IMMUNOL., 140, 1304-1311.
- 37) 14C3'CL: NAHMIAZ,C., STROSBERG,A.D. & EMORINE,L.J. (1988) J. IMMUNOL., 140, 1304-1311.
- 38) K1A5'CL: CORBET,S., MILILI,M., FOUGEREAU,M. & SCHIFF,C. (1987) J. IMMUNOL., 138, 932-939.
- 39) VK-1C'CL: NG,K.H., LAVIGUEUR,A., RICARD,L., BOIVRETTTE,M., MACLEAN,S., CLOUTIER,D. & GIBSON,D.M. (1989) J. IMMUNOL., 143, 638-648.
- 40) V16-19'CL: REININGER,L., BERNEY,T., SHIBATA,T., SPERTINI,F., MERINO,R. & IZUI,S. (1990) PROC.NATL.ACAD.SCI.USA, 87, 10038-10042.
- 41) 688'CL: KAARTINEN,M., PELKONEN,E., EVEN,J. & MAKELA,O. (1988) EUR.J. IMMUNOL., 18, 1095-1100.
- 42) 4D4'CL: KAARTINEN,M., PELKONEN,E., EVEN,J. & MAKELA,O. (1988) EUR.J. IMMUNOL., 18, 1095-1100.
- 43) K18.1'CL: CORBET,S., MILILI,M., FOUGEREAU,M. & SCHIFF,C. (1987) J. IMMUNOL., 138, 932-939.
- 44) RF93'CL: CHIEN,N.C., POLLOCK,R.R., DESAYMARD,C. & SCHARFF,M.D. (1988) J. EXP. MED., 167, 954-973.
- 45) 17G5'CL: KAARTINEN,M., PELKONEN,E., EVEN,J. & MAKELA,O. (1988) EUR.J. IMMUNOL., 18, 1095-1100.
- 46) 36.5.7B'CL: WANG,D., LIAO,J., MITRA,D., AKOLKAR,P.N., GRUEZO,F. & KABAT,E.A. (1991) MOL. IMMUNOL., IN PRESS.
- 47) W3129'CL: BORDEN,P. & KABAT,E.A. (1987) PROC.NATL.ACAD.SCI.USA, 84, 2440-2443.
- 48) 42.4B.12.2'CL: AKOLKAR,P.N., SIKDER,S.K., BHATTACHARYA,S.B., LIAO,J., GRUEZO,F., MORRISON,S.L. & KABAT,E.A. (1987) J. IMMUNOL., 138, 4472-4479. ERRATA CORRECTED 139, 3911.
- 49) 42.7B3.2'CL: WANG,D., LIAO,J., MITRA,D., AKOLKAR,P.N., GRUEZO,F. & KABAT,E.A. (1991) MOL. IMMUNOL., IN PRESS.
- 50) BXW-14'CL: KOFLER,R., STROHAL,R., BALDERAS,R.S., JOHNSON,M.E., NOONAN,D.J., DUCHOSAL,M.A., DIXON,F.J. & THEOFILOPOULOS,A.N. (1988) J. CLIN. INVEST., 82, 852-860.
- 51) PAVK24B'CL: JOUVIN-MARCHE,E. & RUDIKOFF,S. (1986) IMMUNOGENET., 24, 191-201.
- 52) VKAPPA24B'CL: JOHO,R., GERSHENFELD,H. & WEISSMAN,I.L. (1984) EMBO J., 3, 185-191. (CHECKED BY AUTHOR 11/19/85)
- 53) VK-25-39'CL: LUTZ,C.T. & DAVIE,J.M. (1988) J. IMMUNOL., 140, 641-645.
- 54) VK-25-47'CL: LUTZ,C.T. & DAVIE,J.M. (1988) J. IMMUNOL., 140, 641-645.
- 55) PAVK24.2'CL: JOUVIN-MARCHE,E. & RUDIKOFF,S. (1986) IMMUNOGENET., 24, 191-201.
- 56) PAVK24.1'CL: JOUVIN-MARCHE,E. & RUDIKOFF,S. (1986) IMMUNOGENET., 24, 191-201.
- 57) PAVK24.0'CL: JOUVIN-MARCHE,E. & RUDIKOFF,S. (1986) IMMUNOGENET., 24, 191-201.
- 58) PAVK24C'CL: JOUVIN-MARCHE,E. & RUDIKOFF,S. (1986) IMMUNOGENET., 24, 191-201.
- 59) MOPC167'CL: JOHO,R., WEISSMAN,I.L., EARLY,P., COLE,J. & HOOD,L. (1980) PROC.NATL.ACAD.SCI.USA, 77, 1106-1110.
- 60) VKAPPA167'CL: SELSING,E. & STORB,U. (1981) CELL, 25, 47-59. (CHECKED BY AUTHOR 09/11/91); GERSHENFELD,H.K., TSUKAMOTO,A., WEISSMAN,I.L. & JOHO,R. (1981) PROC.NATL.ACAD.SCI.USA, 78, 1764-1768; GEARHART,P.V. & BOGENHAGEN,D.F. (1983) PROC.NATL.ACAD.SCI.USA, 80, 3439-3443. (CHECKED BY AUTHOR 07/22/83)
- 61) VKAPPA24A'CL: JOHO,R., GERSHENFELD,H. & WEISSMAN,I.L. (1984) EMBO J., 3, 185-191. (CHECKED BY AUTHOR 11/19/85)
- 62) MOPC11'CL: SEIDMAN,J.G. & LEDER,P. (1980) NATURE, 286, 779-783. (CHECKED BY AUTHOR 11/06/80); SIKDER,S.K., KABAT,E.A. & MORRISON,S.L. (1985) PROC.NATL.ACAD.SCI.USA, 82, 4045-4049.
- 63) MOPC321: SCHECHTER,I., MCKEEAN,D., GUYER,R. & TERRY,W. (1975) SCIENCE, 188, 160-162; BURSTEIN,Y. & SCHECHTER,I. (1978) BIOCHEMISTRY, 17, 2392-2400. (CHECKED BY AUTHOR 08/29/79)
- 64) 2.7.1G.10'CL: KOGA,H., KANDA,H., NAKASHIMA,M., WATANABE,Y., ENDO,K. & WATANABE,T. (1990) HYBRIDOMA, 9, 43-56.
- 65) VK-21G'CL: ALANEN,A. & WEISS,S. (1989) EUR.J. IMMUNOL., 19, 1961-1963.
- 66) VK-21A'CL: ALANEN,A. & WEISS,S. (1989) EUR.J. IMMUNOL., 19, 1961-1963.
- 67) 05'CL: O'KEEFE,T.L., BANDYOPADHYAY,S., DATTA,S.K. & IMANISHI-KARI,T. (1990) J. IMMUNOL., 144, 4275-4283.
- 68) 11'CL: O'KEEFE,T.L., BANDYOPADHYAY,S., DATTA,S.K. & IMANISHI-KARI,T. (1990) J. IMMUNOL., 144, 4275-4283.
- 69) 12'CL: O'KEEFE,T.L., BANDYOPADHYAY,S., DATTA,S.K. & IMANISHI-KARI,T. (1990) J. IMMUNOL., 144, 4275-4283.
- 70) 4.3.6B8'CL: WANG,D., LIAO,J., MITRA,D., AKOLKAR,P.N., GRUEZO,F. & KABAT,E.A. (1991) MOL. IMMUNOL., IN PRESS.
- 71) MOPC63: BURSTEIN,Y. & SCHECHTER,I. (1976) BIOCHEM.J., 157, 145-151; BURSTEIN,Y. & SCHECHTER,I. (1978) BIOCHEMISTRY, 17, 2392-2400. (CHECKED BY AUTHOR 08/29/79)
- 72) 13'CL: O'KEEFE,T.L., BANDYOPADHYAY,S., DATTA,S.K. & IMANISHI-KARI,T. (1990) J. IMMUNOL., 144, 4275-4283.
- 73) 30'CL: O'KEEFE,T.L., BANDYOPADHYAY,S., DATTA,S.K. & IMANISHI-KARI,T. (1990) J. IMMUNOL., 144, 4275-4283.
- 74) 2B2'CL: KAARTINEN,M. & MAKELA,O. (1987) J. IMMUNOL., 138, 1613-1617.
- 75) 12C4'CL: KAARTINEN,M. & MAKELA,O. (1987) J. IMMUNOL., 138, 1613-1617.
- 76) MRL-Histone7'CL: KOFLER,R., NOONAN,D.J., STROHAL,R., BALDERAS,R.S., MOLLER,N.P.H., DIXON,F.J. & THEOFILOPOULOS,A.N. (1987) EUR.J. IMMUNOL., 17, 91-95. (CHECKED BY AUTHOR 06/23/87)
- 77) 7B6'CL: KAARTINEN,M. & MAKELA,O. (1987) J. IMMUNOL., 138, 1613-1617.
- 78) MRL-22'CL: KOFLER,R., STROHAL,R., BALDERAS,R.S., JOHNSON,M.E., NOONAN,D.J., DUCHOSAL,M.A., DIXON,F.J. & THEOFILOPOULOS,A.N. (1988) J. CLIN. INVEST., 82, 852-860.
- 79) VAKB8'CL: SELSING,E. (1984) NUCL.ACIDS RES., 12, 4229-4245.
- 80) 18-2-3'CL: DOMBRIK-KURTZMAN,M.A., JOHNSON,L.S., RIORDAN,G.S., BEDZYK,W.D. & VOSS,E.W.,JR. (1989) J. BIOL.CHEM., 264, 4513-4522.
- 81) SD3'CL: KAARTINEN,M., PELKONEN,E., EVEN,J. & MAKELA,O. (1988) EUR.J. IMMUNOL., 18, 1095-1100.
- 82) 6G11'CL: KAARTINEN,M. & MAKELA,O. (1987) J. IMMUNOL., 138, 1613-1617.
- 83) 37A4'CL: NAHMIAZ,C., STROSBERG,A.D. & EMORINE,L.J. (1988) J. IMMUNOL., 140, 1304-1311.
- 84) T3C'CL: ROTH,M.S., WEINER,G.J., ALLEN,E.A., TERRY,V.H., HARNDEN,C.E., BOEHNKE,M., KAMINSKI,M.S. & GINSBURG,D. (1990) J. IMMUNOL., 145, 768-777.
- 85) L8'CL: HOECHTL,J., MUELLER,C.R. & ZACHAU,H.G. (1982) PROC.NATL.ACAD.SCI.USA, 79, 1383-1387. (CHECKED BY AUTHOR 12/21/82)
- 86) S107B'CL: KWAN,S.P., MAX,E.Z., SEIDMAN,J.G., LEDER,P. & SCHARFF,M.D. (1981) CELL, 26, 57-66.
- 87) T2E(1)'CL: ROTH,M.S., WEINER,G.J., ALLEN,E.A., TERRY,V.H., HARNDEN,C.E., BOEHNKE,M., KAMINSKI,M.S. & GINSBURG,D. (1990) J. IMMUNOL., 145, 768-777.
- 88) 38CV3'CL: CARROLL,W.L., STARNE,C.O., LEVY,R. & LEVY,S. (1988) J. EXP. MED., 168, 1607-1620.
- 89) 38CV4'CL: CARROLL,W.L., STARNE,C.O., LEVY,R. & LEVY,S. (1988) J. EXP. MED., 168, 1607-1620.
- 90) V-K10 ARS-A'CL: SANZ,I. & CAPRA,J.D. (1987) PROC.NATL.ACAD.SCI.USA, 84, 1085-1089.
- 91) AC-1001'CL: CHEN,H.-T., KABAT,E.A., LUNDBLAD,A. & RATCLIFFE,R.M. (1987) J. BIOL.CHEM., 262, 13579-13583.
- 92) 7F11'CL: KAARTINEN,M., PELKONEN,E., EVEN,J. & MAKELA,O. (1988) EUR.J. IMMUNOL., 18, 1095-1100.
- 93) 2B1'CL: LI,Y.-W., LAURIE,D.K., THAMMANA,P., MOORE,G.P. & SHEARMAN,C.W. (1990) MOL. IMMUNOL., 27, 303-311.
- 94) H12'CL: KAARTINEN,M., PELKONEN,E., EVEN,J. & MAKELA,O. (1988) EUR.J. IMMUNOL., 18, 1095-1100.
- 95) 5-27'CL: BEDZYK,W.D., HERRON,J.N., EDMUNDSON,A.B. & VOSS,E.W.,JR. (1990) J. BIOL.CHEM., 265, 133-138.
- 96) 18C10'CL: KAARTINEN,M., ROCCA-SERRA,J., MAKELA,O. (1988) MOL. IMMUNOL., 25, 859-865; KAARTINEN,M., PELKONEN,E., EVEN,J. & MAKELA,O. (1988) EUR.J. IMMUNOL., 18, 1095-1100.
- 97) 38C13'CL: CAMPBELL,M.J., CARROL,W., KON,S., THIELEMANS,K., ROTHBARD,J.B., LEVY,S. & LEVY,R. (1987) J. IMMUNOL., 139, 2825-2833.
- 98) 38C'CL: CARROLL,W.L., STARNE,C.O., LEVY,R. & LEVY,S. (1988) J. EXP. MED., 168, 1607-1620.
- 99) PC633'CL: FEDDERSEN,R. & VAN NESS,B. (1989) NUCL.ACIDS RES., 17, 9797-9809.
- 100) 38C13V'CL: ROTH,M.S., WEINER,G.J., ALLEN,E.A., TERRY,V.H., HARNDEN,C.E., BOEHNKE,M., KAMINSKI,M.S. & GINSBURG,D. (1990) J. IMMUNOL., 145, 768-777.
- 101) MOPC173B'CL: MAX,E.E., SEIDMAN,J.G., MILLER,H. & LEDER,P. (1980) CELL, 21, 793-799. (CHECKED BY AUTHOR 11/06/80)
- 102) T1'CL: ALTENBURGER,W., STEINMETZ,M. & ZACHAU,H.G. (1980) NATURE, 287, 603-607. (CHECKED BY AUTHOR 12/21/82)
- 103) K2A'CL: NISHIOKA,Y. & LEDER,P. (1980) J. BIOL.CHEM., 255, 3691-3694. (CHECKED BY AUTHOR 11/06/80)

DN DELETED

1370  
J.CHEM., 263, 17100-17106.1589-2593. (CHECKED BY  
1345-345.  
IA, 86, 4624-4628.

3-40.

## REFERENCE: SIGNAL PEPTIDES OF MOUSE KAPPA LIGHT CHAINS (cont'd)

- 104) RPT2'CL: HEINRICH,G., GRAM,H., KOCHER,H.P., SCHREIER,M.H., RYFFEL,B., AKBAR,A., AMLOT,P.L. & JANOSY,G. (1989) J. IMMUNOL., 143, 3589-3597.
- 105) Lym-1'CL: HEINRICH,A.A. & MEARES,C.F. (1990) NUCL.ACIDS RES., 18, 5281.
- 106) Vkr33'CL: D'HOOSTELAERE,L.A. & KLINMAN,D. (1990) J. IMMUNOL., 145, 2706-2712.
- 107) 10.2.8'CL: WANG,D., LIAO,J., MITRA,D., AKOLKAR,P.N., GRUEZO,F. & KABAT,E.A. (1991) MOL. IMMUNOL., IN PRESS.
- 108) VT1/B'CL: GORSKI,J., ROLLINI,P. & MACH,B. (1983) SCIENCE, 220, 1179-1181.
- 109) L6'CL: PECH,M., HOCHTL,J., SCHNELL,H. & ZACHAU,H.G. (1981) NATURE, 291, 668-670. (CHECKED BY AUTHOR 12/02/81)
- 110) 2-264'CL: HARDY,R.R., CARMACK,C.E., SHINTON,S.A., RIBLET,R.J. & HAYAKAWA,K. (1989) J. IMMUNOL., 142, 3643-3651.
- 111) 2-2C8'CL: HARDY,R.R., CARMACK,C.E., SHINTON,S.A., RIBLET,R.J. & HAYAKAWA,K. (1989) J. IMMUNOL., 142, 3643-3651.
- 112) B16.2K1'CL: FORSTER,I., GU,H. & RAJEWSKY,K. (1988) EMBO J., 7, 3693-3703.
- 113) UN34.11'CL: KASTURA,K.N., MAHER,R., BONA,C.A., SCOTT,V.E. & SIDMAN,C.L. (1990) J. IMMUNOL., 145, 2304-2311.
- 114) C.ANK'CL: PONATH,P.D., HILLIS,D.M. & GOTTLIEB,P.D. (1989) IMMUNOGENET., 29, 249-257.
- 115) SF/CamE1'CL: PONATH,P.D., HILLIS,D.M. & GOTTLIEB,P.D. (1989) IMMUNOGENET., 29, 249-257.
- 116) PERA/B1'CL: PONATH,P.D., HILLIS,D.M. & GOTTLIEB,P.D. (1989) IMMUNOGENET., 29, 249-257.
- 117) 4.2.6D12'CL: WANG,D., LIAO,J., MITRA,D., AKOLKAR,P.N., GRUEZO,F. & KABAT,E.A. (1991) MOL. IMMUNOL., IN PRESS.
- 118) SK/CamR'CL: PONATH,P.D., HILLIS,D.M. & GOTTLIEB,P.D. (1989) IMMUNOGENET., 29, 249-257.
- 119) C8.5VK'CL: SHEPHER,R., MAYER,R., KAUSHIK,A., D'EUSTACHIO,P., BONA,C. & DIAMOND,B. (1990) J. IMMUNOL., 145, 1609-1614.
- 120) UN42.5'CL: KASTURA,K.N., MAHER,R., BONA,C.A., SCOTT,V.E. & SIDMAN,C.L. (1990) J. IMMUNOL., 145, 2304-2311.
- 121) BXW-16'CL: KOFLER,R., STROHAL,R., BALDERAS,R.S., JOHNSON,M.E., NOONAN,D.J., DUCHOSAL,M.A., DIXON,F.J. & THEOFILOPOULOS,A.N. (1988) J. CLIN. INVEST., 82, 852-860.
- 122) K3'CL: SIDMAN,S.M., LEDER,A., EDGEWELL,M.H., POLSKY,T., TILGHMAN,S.M., TIEMBEIR,D.E. & LEDER,P. (1978) PROC. NATL. ACAD. SCI. USA, 75, 3881-3885.
- 123) C.58 M75'CL: GOLDRICK,M.M., BOYD,R.T., PONATH,P.D., LOU,S.-Y. & GOTTLIEB,P.D. (1985) J. EXP. MED., 162, 713-728.
- 124) C.588 VKEx'CL: BOYD,R.T., GOLDRICK,M.M. & GOTTLIEB,P.D. (1986) PROC. NATL. ACAD. SCI. USA, 83, 9134-9138.
- 125) MRL-RF28(VK28)'CL: KOFLER,R., DUCHOSAL,M.A. & DIXON,F.J. (1989) IMMUNOGENET., 29, 65-74.
- 126) E225'CL: SOUCHON,H., DOVEN,R., RIOTTO,T.M.-M., ROUGEON,F. & POLJAK,R.J. (1990) MOL. IMMUNOL., 27, 429-433.
- 127) MPC11: ROSS,S.M., KUEHL,W.M. & SMITH,G.P. (1977) CELL, 12, 453-462; KELLEY,D.E., COLECLough,C. & PERRY,R.P. (1982) CELL, 29, 661-669.
- 128) A003=40/5G7'CL: CHEN,H.-T., KABAT,E.A., LUNDBLAD,A. & RATCLIFFE,R.M. (1987) J. BIOL. CHEM., 262, 13579-13583.
- 129) CEA 66-K3'CL: CABILLY,S., RIGGS,A.D., PANDE,H., SHIVELY,C.E., HOLMES,W.E., REY,M., PERRY,L.J., WETZEL,R. & HEYNKER,H.L. (1984) PROC. NATL. ACAD. SCI. USA, 81, 3273-3277. (CHECKED BY AUTHOR 06/12/84)
- 130) VTNP'CL: HAWLEY,R.G., SHUMAN,M.J., MURJAH,H., GIBSON,D.M., HOZUMI,N. (1982) PROC. NATL. ACAD. SCI. USA, 79, 7425-7429.
- 131) CEM231.6.7'CL: BEIDLER,C.B., LUDWIG,J.R., CARDENAS,J., PHELPS,J., PAWORTH,C.G., MELCHER,E., SIERZEGA,M., MYERS,L.J., UNGER,B.W., FISHER,M., DAVID,G.S. & JOHNSTON,M.J. (1988) J. IMMUNOL., 141, 4053-4060.
- 132) BALB/cVMSer'CL: BOYD,R.T., GOLDRICK,M.M. & GOTTLIEB,P.D. (1986) PROC. NATL. ACAD. SCI. USA, 83, 9134-9138.
- 133) B6.2'CL: SAHAGAN,B.G., DORNIK,H., STALZGABER-MULLER,J., TONEGAWA,F., GUINDON,C.A., LILLY,S.P., McDONALD,K.W., MORRISSEY,D.V., STONE,B.A., DAVIS,G.Z., MCINTOSH,P.K. & MOORE,G.P. (1986) J. IMMUNOL., 137, 1066-1074.
- 134) MPC21: ROSE,S.M., KUEHL,W.M. & SMITH,G.P. (1977) CELL, 12, 453-462; HAMILYN,P.H., GAIT,M.J. & MILSTEIN,C. (1981) NUC. ACIDS RES., 9, 4485-4494.
- 135) 17-1A'CL: SUN,L.K., CURTIS,P., RAKOWICZ-SZULCZYNSKA,E., GHRAYEB,J., CHANG,N., MORRISON,S.L. & KOPROWSKI,H. (1987) PROC. NATL. ACAD. SCI. USA, 84, 214-218.
- 136) E7'CL: BACCALA,R., QUANG,T.V., GILBERT,M., TERMYNCK,T. & AVRAMEAS,S. (1989) PROC. NATL. ACAD. SCI. USA, 86, 4624-4628.
- 137) MRL-RF24'CL: KOFLER,R., NOONAN,D.J., STROHAL,R., BALDERAS,R.S., MOLLER,N.P.H., DIXON,F.J. & THEOFILOPOULOS,A.N. (1987) EUR. J. IMMUNOL., 17, 91-95. (CHECKED BY AUTHOR 06/23/87)
- 138) L7'CL: PECH,M., HOCHTL,J., SCHNELL,H. & ZACRAU,H.G. (1981) NATURE, 291, 668-670. (CHECKED BY AUTHOR 12/02/81)
- 139) T2'CL: ALTERNBURGER,W., STEINMETZ,M. & ZACHAU,H.G. (1980) NATURE, 287, 603-607. (CHECKED BY AUTHOR 12/21/82)
- 140) 87.92.6'CL: BRUCK,C., CO,G., SLAOUI,M., GAULTON,G.N., SMITH,T., FIELDS,B.N., MULLINS,J.I. & GREENE,M.I. (1986) PROC. NATL. ACAD. SCI. USA, 83, 6578-6582.
- 141) 45.21.1'CL: SIDKER,S.K., AKOLKAR,P.N., KALADAS,P.M., MORRISON,S.L. & KABAT,E.A. (1985) J. IMMUNOL., 135, 4215-4221. (CHECKED BY AUTHOR 11/25/85 WHO CORRECTED POSITION -8 AS SHOWN)
- 142) 10C11'CL: KAArtinen,M. & MAKELA,O. (1987) J. IMMUNOL., 138, 1613-1617.
- 143) 18G8'CL: KAArtinen,M. & MAKELA,O. (1987) J. IMMUNOL., 138, 1613-1617.
- 144) 14.6b.1'CL: SIDKER,S.K., AKOLKAR,P.N., KALADAS,P.M., MORRISON,S.L. & KABAT,E.A. (1985) J. IMMUNOL., 135, 4215-4221. (CHECKED BY AUTHOR 11/25/85 WHO CORRECTED POSITION -8 AS SHOWN)
- 145) 26.4.1'CL: SIDKER,S.K., AKOLKAR,P.N., KALADAS,P.M., MORRISON,S.L. & KABAT,E.A. (1985) J. IMMUNOL., 135, 4215-4221. (CHECKED BY AUTHOR 11/25/85 WHO CORRECTED POSITION -8 AS SHOWN)
- 146) 5G11'CL: KAArtinen,M. & MAKELA,O. (1987) J. IMMUNOL., 138, 1613-1617.
- 147) 14B4'CL: KAArtinen,M. & MAKELA,O. (1987) J. IMMUNOL., 138, 1613-1617.
- 148) 58.2C.10.3'CL: AKOLKAR,P.N., SIDKER,S.K., BHATTACHARYA,S.B., LIAO,J., GRUEZO,F., MORRISON,S.L. & KABAT,E.A. (1987) J. IMMUNOL., 138, 4472-4479. ERRATA CORRECTED 138, 3911.
- 149) 6B10'CL: KAArtinen,M. & MAKELA,O. (1987) J. IMMUNOL., 138, 1613-1617.
- 150) 4F10'CL: KAArtinen,M. & MAKELA,O. (1987) J. IMMUNOL., 138, 1613-1617.
- 151) 6F6'CL: KAArtinen,M., ROCCA-SERRA,J. & MAKELA,O. (1988) MOL. IMMUNOL., 25, 859-865.
- 152) 7C6'CL: KAArtinen,M., PELKONEN,E., EVEN,J. & MAKELA,O. (1988) EUR. J. IMMUNOL., 18, 1095-1100.
- 153) 8E3'CL: KAArtinen,M., PELKONEN,E., EVEN,J. & MAKELA,O. (1988) EUR. J. IMMUNOL., 18, 1095-1100.
- 154) B26'CL: KAArtinen,M., SOLIN,M.-L. & MAKELA,O. (1989) EMBO J., 8, 1743-1748.
- 155) 3F2'CL: KAArtinen,M., SOLIN,M.-L. & MAKELA,O. (1989) EMBO J., 8, 1743-1748.
- 156) 12G10'CL: KAArtinen,M., SOLIN,M.-L. & MAKELA,O. (1989) EMBO J., 8, 1743-1748.
- 157) 10G10'CL: KAArtinen,M., SOLIN,M.-L. & MAKELA,O. (1989) EMBO J., 8, 1743-1748.
- 158) 3E3'CL: KAArtinen,M., SOLIN,M.-L. & MAKELA,O. (1989) EMBO J., 8, 1743-1748.
- 159) 13D4'CL: KAArtinen,M., SOLIN,M.-L. & MAKELA,O. (1989) EMBO J., 8, 1743-1748.
- 160) 9G6'CL: KAArtinen,M., SOLIN,M.-L. & MAKELA,O. (1989) EMBO J., 8, 1743-1748.
- 161) 3B6'CL: KAArtinen,M., SOLIN,M.-L. & MAKELA,O. (1989) EMBO J., 8, 1743-1748.
- 162) 11G3'CL: KAArtinen,M., SOLIN,M.-L. & MAKELA,O. (1989) EMBO J., 8, 1743-1748.
- 163) 564'CL: O'KEEFFE,T.L., BANDYOPADHYAY,S., DATTA,S.K. & IMANISHI-KARI,T. (1990) J. IMMUNOL., 144, 4275-4283.
- 164) 550'CL: O'KEEFFE,T.L., BANDYOPADHYAY,S., DATTA,S.K. & IMANISHI-KARI,T. (1990) J. IMMUNOL., 144, 4275-4283.
- 165) 563'CL: O'KEEFFE,T.L., BANDYOPADHYAY,S., DATTA,S.K. & IMANISHI-KARI,T. (1990) J. IMMUNOL., 144, 4275-4283.
- 166) 42.5D4.2'CL: WANG,D., LIAO,J., MITRA,D., AKOLKAR,P.N., GRUEZO,F. & KABAT,E.A. (1991) MOL. IMMUNOL., IN PRESS.
- 167) 37.1B5.1'CL: WANG,D., LIAO,J., MITRA,D., AKOLKAR,P.N., GRUEZO,F. & KABAT,E.A. (1991) MOL. IMMUNOL., IN PRESS.
- 168) 4C11'CL: CHENG,H.-L., SOOD,A.K., NARD,R.E., KIEBER-EMMONS,T. & KOHLER,H. (1988) MOL. IMMUNOL., 25, 33-40.
- 169) 567'CL: O'KEEFFE,T.L., BANDYOPADHYAY,S., DATTA,S.K. & IMANISHI-KARI,T. (1990) J. IMMUNOL., 144, 4275-4283.
- 170) 10.4'CL: ROTH,M.S., WEINER,G.J., ALLEN,E.A., TERRY,V.H., HARNDEN,C.E., BOEHNKE,M., KAMINSKI,M.S. & GINSBURG,D. (1990) J. IMMUNOL., 145, 768-777.
- 171) 3C5'CL: KAArtinen,M. & MAKELA,O. (1987) J. IMMUNOL., 138, 1613-1617.
- 172) 5G2'CL: KAArtinen,M., PELKONEN,E., EVEN,J. & MAKELA,O. (1988) EUR. J. IMMUNOL., 18, 1095-1100.
- 173) 70E/3'CL: PARSLAW,T.G., BLAIR,D.L., MURRAY,W.J. & GRANNER,D.K. (1984) PROC. NATL. ACAD. SCI. USA, 81, 2650-2654. (CHECKED BY AUTHOR 03/14/85)
- 174) 2H7'CL: LIU,A.Y., ROBINSON,R.R., MURRAY,E.D., JR., LEDBETTER,J.A., HELLSTROM,I. & HELLSTROM,K.E. (1987) J. IMMUNOL., 139, 3521-3526.
- 175) L6'CL: LIU,A.Y., ROBINSON,R.R., HELLSTROM,K.E., MURRAY,E.D., JR., CHANG,C.P. & HELLSTROM,I. (1987) PROC. NATL. ACAD. SCI. USA, 84, 3439-3443.
- 176) 2C7'CL: KAArtinen,M. & MAKELA,O. (1987) J. IMMUNOL., 138, 1613-1617.
- 177) 38CV1'CL: CARROLL,W.L., STARNESS,C.O., LEVY,R. & LEVY,S. (1988) J. EXP. MED., 168, 1607-1620.
- 178) TEPC(CAL20)105'CL: MOYNET,D., MACLEAN,S.J., NG,K.H., ANCIL,T.D. & GIBSON,D.M. (1985) J. IMMUNOL., 134, 3455-3460; MOYNET,D., MACLEAN,S.J., NG,K.H., ANCIL,T.D. & GIBSON,D.M. (1985) J. IMMUNOL., 135, 727-732.
- 179) 26-10'V'CL: NEAR,R.I., NG,S.C., MUGGETT-HUNTER,M., HUDSON,N.W., MARGOLIES,M.N., SEIDMAN,J.G., HABER,E. & JACOBSON,M.A. (1990) MOL. IMMUNOL., 27, 901-909.
- 180) MPC11C: ROSE,S.M., KUEHL,W.M. & SMITH,G.P. (1977) CELL, 12, 453-462; BURSTEIN,Y., ZEMELL,R., KANTOR,F. & SCHECHTER,I. (1977) PROC. NATL. ACAD. SCI. USA, 74, 3157-3161; BURSTEIN,Y. & SCHECHTER,I. (1978) BIOCHEMISTRY, 17, 2392-2400. (CHECKED BY AUTHOR 12/15/82)
- 181) V-21C9.5KB'CL: HEINRICH,G., TRAUNECKER,A. & TONEGAWA,S. (1984) J. EXP. MED., 159, 417-435.
- 182) V-21E1.5KB'CL: HEINRICH,G., TRAUNECKER,A. & TONEGAWA,S. (1984) J. EXP. MED., 159, 417-435.
- 183) V-21E1.6KB'CL: HEINRICH,G., TRAUNECKER,A. & TONEGAWA,S. (1984) J. EXP. MED., 159, 417-435.
- 184) V-21B18KB'CL: HEINRICH,G., TRAUNECKER,A. & TONEGAWA,S. (1984) J. EXP. MED., 159, 417-435.
- 185) V-21B16KB'CL: HEINRICH,G., TRAUNECKER,A. & TONEGAWA,S. (1984) J. EXP. MED., 159, 417-435.
- 186) 91A3'CL: SANZ,I. & CAPRA,J.D. (1987) PROC. NATL. ACAD. SCI. USA, 84, 1085-1089.
- 187) MPC41'CL: SEIDMAN,J.G., MAX,E.E. & LEDER,P. (1979) NATURE, 280, 370-373.
- 188) MPC41A: SCHECHTER,I. & BURSTEIN,Y. (1976) BIOCHEM. BIOPHYS. RES. COMMUN., 68, 489-496; BURSTEIN,Y. & SCHECHTER,I. (1977) PROC. NATL. ACAD. SCI. USA, 74, 716-720; BURSTEIN,Y. & SCHECHTER,I. (1978) BIOCHEMISTRY, 17, 2392-2400. (CHECKED BY AUTHOR 08/29/79)
- 189) MPC41B: SCHECHTER,I. & BURSTEIN,Y. (1976) BIOCHEM. BIOPHYS. RES. COMMUN., 68, 489-496; BURSTEIN,Y. & SCHECHTER,I. (1978) BIOCHEMISTRY, 17, 2392-2400. (CHECKED BY AUTHOR 08/29/79)

## REFERENCE: SIGNAL PEPTIDE

- 190) K2'CL: NISHIOKA,Y. & L.
- 191) 40-140'CL: NEAR,R.I. &
- 192) MPC21'CL: FONG,W., LEBI,C. (1981) NUC.
- 193) 19.22.1'CL: AKOLKAR,P.I. 138, 4472-4479.
- 194) 2154'CL: KEELEY,D.E., W.
- 195) I(KO)'CL: VAN NEES,B.G.
- 196) 5563(C3B)L: SINGER,H.H. AUTHOR 11/06/81
- 197) 42.9E5.2'CL: WANG,D., LIA
- 198) 4.14.3'CL: WANG,D., LIA

## GENERAL NOTES: SIGNAL P

- \* THE NUCLEOTIDE SEQUENCE  
THE SPLICING OUT OF THESE IS  
HOWEVER, IF THE SPLICING RE  
OCCURRING WITHIN THE CODON
- CLONE: SOU
- HK100'CL HUM
- HK101'CL HUM
- HK102'CL HUM
- MOPC173B'CL MOU
- S107B'CL MOU
- L8'CL MOU
- K2'CL MOU
- MPC11'CL MOU
- VKAFFA167'CL MOU
- L6'CL MOU
- L7'CL MOU
- T1'CL MOU
- T2'CL MOU
- VT1/B'CL MOU
- VTNP'CL MOU

## SPECIFIC NOTES: SIGNAL

- 13) TF5-139'CL: FROM BALB.
- 17) MBx1'CL: IT IS A CHIMI  
IGG1-KAPPa).
- 19) K5.1'CL: ISOLATED BY :
- 38) K1A5'CL: ISOLATED BY :
- 43) K18.1'CL: ISOLATED BY :
- 44) RP93'CL: IT WAS ISOLAT
- 60) VKAPPAl67'CL: THE V I
- 64) 2.7.1G.10.1'CL: A MOUSE  
SAME AFFINITY
- 67) 05'CL: PATHOGENIC AUTO
- 68) 11'CL: PATHOGENIC AUTO
- 69) 12'CL: PATHOGENIC AUTO
- 72) 13'CL: PATHOGENIC AUTO
- 73) 30'CL: PATHOGENIC AUTO
- 74) 2B2'CL: THE SEQUENCE I  
AFTER IMMUNIZ
- 75) 12C4'CL: THE SEQUENCE  
AFTER IMMUNIZ
- 77) 7B6'CL: THE SEQUENCE I  
AFTER IMMUNIZ
- 82) 6G11'CL: THE SEQUENCE  
AFTER IMMUNIZ
- 84) T3C'CL: ANTI-IDIOTYPE  
TO RE-REARRANG
- 85) LB'CL: THE SPLICING (
- 86) S107B'CL: THE SPLICING
- 87) T2E(1)'CL: ANTI-IDIOTY  
DUE TO RE-RE-AI
- 90) V-K10 ARS-A'CL: TERMII
- 93) 2B1'CL: A CHIMERIC AN
- 100) 38C13V'CL: ANTI-IDIOTY  
DUE TO RE-RE-AI
- 104) RPT2'CL: THE VARIABLE  
KAPPa AND IGG1  
CHIT2; SDZ 214-
- 126) E225'CL: IT REACTS WI
- 127) MPC11: THE TRANSLATED
- 129) CEA 66-K3'CL: THIS AN
- 131) CEM231.6.7'CL: IT IS /
- 133) B6.2'CL: THE V-REGIONS
- 138) L7'CL: THE AUTHORS SI
- NO RESIDUES AT
- 140) 87.92.6'CL: MONOCLONAL  
THE MAMMALIAN  
REORVIS TYPE
- 142) 10C11'CL: THE SEQUENCE  
AFTER IMMUNIZ
- 143) 18G8'CL: THE SEQUENCE  
AFTER IMMUNIZ
- 146) 5G11'CL: THE SEQUENCE  
AFTER IMMUNIZ
- 147) 14B4'CL: THE SEQUENCE  
AFTER IMMUNIZ
- 149) 6B10'CL: THE SEQUENCE  
AFTER IMMUNIZ
- 150) 4F10'CL: THE SEQUENCE  
AFTER IMMUNIZ
- 154) H26'CL: ISOLATED 7 DAY
- 155) 3F2'CL: ISOLATED 7 DAY

## REFERENCE: SIGNAL PEPTIDES OF MOUSE KAPPA LIGHT CHAINS (cont'd)

- G. (1989) J. IMMUNOL., 143, PRESS.  
 R 12/02/81)  
 3643-3651.  
 3643-3651.  
 -2311.
- 190) K2'CL: NISHIOKA, Y. & LEDER, P. (1980) J. BIOL. CHEM., 255, 3691-3694. (CHECKED BY AUTHOR 11/06/80)  
 191) 40-140'CL: NEAR, R.I. & HABER, E. (1989) MOL. IMMUNOL., 26, 371-382.  
 192) MOPC21'CL: FONG, K., LEI, A. & SALSER, W. (1979) BIOCHEM. BIOPHYS. RES. COMMUN., 80, 832-841; HAMLYN, P.H., GAIT, M.J. & MILSTEIN, C. (1981) NUC. ACIDS RES., 9, 4485-4494. (CHECKED BY AUTHOR 04/19/84)  
 193) 19.22.1'CL: AKOLKAR, P.N., SINKER, S.K., BHATTACHARYA, S.B., LIAO, J., GRUEZO, F., MORRISON, S.L. & KABAT, E.A. (1987) J. IMMUNOL., 138, 4472-4479. ERRATA CORRECTED 139, 3911.  
 194) 2154'CL: KELLEY, D.E., WIEDEMANN, L.M., PITTEK, A.-C., STRAUSS, S., NELSON, K.J., DAVIS, J., VAN NESS, B. & PERRY, R.P. (1985) MOLEC. & CHEM. BIOL., 5, 7, 1660-1675.  
 195) I(KO)'CL: VAN NESS, B.G., WEIGERT, M., COLECOUGH, C., MATHER, E.L., KELLEY, D.E. & PERRY, R.P. (1981) CELL, 27, 593-602.  
 196) 5563(C3B)'CL: SINGER, H.H., GATES, F.T., III, KINTD, T.J. & WILLIAMSON, A.R. (1980) EUR. J. IMMUNOL., 10, 346-351. (CHECKED BY AUTHOR 11/06/80)  
 197) 42.9E5.2'CL: WANG, D., LIAO, J., MITRA, D., AKOLKAR, P.N., GRUEZO, F. & KABAT, E.A. (1991) MOL. IMMUNOL., IN PRESS.  
 198) 4.14.3'CL: WANG, D., LIAO, J., MITRA, D., AKOLKAR, P.N., GRUEZO, F. & KABAT, E.A. (1991) MOL. IMMUNOL., IN PRESS.

## IN PRESS.

, 145, 1609-1614.  
 2311.  
 & THEOFILOPOULOS, A.N.  
 ) PROC. NATL. ACAD. SCI. USA,  
 62, 713-728.  
 138.

3.  
 RRY, R.P. (1982) CELL, 29, 9-13583.  
 R. & HEYNEKER, H.L.  
 USA, 79, 7425-7429.  
 , M., MYERS, L.J., UNGER,  
 138.  
 LD, K.W., MORRISSEY, D.V.,  
 SIN, C. (1981) NUC. ACIDS  
 KSI, H. (1987)  
 , 86, 4624-4628.  
 POULOS, A.N. (1987)  
 R. 12/02/81)  
 12/21/82)  
 4.1. (1986)  
 135, 4215-4221. (CHECKED

THE NUCLEOTIDE SEQUENCES OF DIFFERENT CLONES CONTAIN AN INTERVENING SEQUENCE OF NONTRANSLATED BASES OF VARYING LENGTHS. THE SPLICING OUT OF THESE INTRONS COULD OCCUR BETWEEN AMINO ACID POSITIONS -5 AND -4, OR -4 AND -3, OR WITHIN POSITION -4. HOWEVER, IF THE SPLICING REQUIRES GT AT THE 5'-END AND AG AT THE 3'-END OF THE INTRON, THIS WOULD DEFINE THE JOINING AS OCCURRING WITHIN THE CODON OF AMINO ACID RESIDUE -4. THE INTRON SIZES OF DIFFERENT SEQUENCES ARE LISTED BELOW:

CLONE:	SOURCE:	INTRON SIZE:
HK100'CL	HUMAN FETAL LIVER DNA	118
HK101'CL	HUMAN FETAL LIVER DNA	125
HK102'CL	HUMAN FETAL LIVER DNA	125
MOPC173B'CL	MOUSE ADULT DNA	121
S107B'CL	MOUSE ADULT MYELOMA DNA	175
L8'CL	MOUSE ADULT LIVER DNA	175
K2'CL	MOUSE EMBRYO DNA	118
MPC11'CL	MOUSE ADULT DNA	242
VKAPELLA167'CL	MOUSE ADULT LIVER DNA	365
L6'CL	MOUSE ADULT LIVER DNA	113
L7'CL	MOUSE ADULT LIVER DNA	206
T1'CL	MOUSE ADULT MYELOMA DNA	113
T2'CL	MOUSE ADULT MYELOMA DNA	215
VT1/B'CL	MOUSE ADULT MYELOMA DNA	113
VTNP'CL	MOUSE HYBRIDOMA DNA	177

## SPECIFIC NOTES: SIGNAL PEPTIDES OF MOUSE KAPPA LIGHT CHAINS

- 135, 4215-4221. (CHECKED  
 35, 4215-4221. (CHECKED  
 VT, E.A. (1987)
13. TF5-139'CL: FROM BALB/c NEONATAL SPLEEN CELLS.  
 17) MBR1'CL: IT IS A CHIMERIC ANTIBODY WITH MOUSE VARIABLE REGIONS (FROM IGM-KAPPA) AND HUMAN CONSTANT REGIONS (FROM IgG1-KAPPA).  
 19) K5.1'CL: ISOLATED BY STRONG HYBRIDIZATION TO VK-GAT-SPECIFIC PROBES.  
 38) K1A5'CL: ISOLATED BY STRONG HYBRIDIZATION TO VK-GAT-SPECIFIC PROBES.  
 43) K18.1'CL: ISOLATED BY STRONG HYBRIDIZATION TO VK-GAT-SPECIFIC PROBES.  
 44) RP93'CL: IT WAS ISOLATED FROM A BALB/c MOUSE HYPERIMMUNIZED WITH PC-KLR.  
 60) VKAPPAP167'CL: THE V REGION IS CALLED VKAPPAP24'CL. SEE NOTES OF MOUSE KAPPA LIGHT CHAIN TABLE.  
 64) 2.7.16.10'CL: A MOUSE-HUMAN CHIMERIC ANTIBODY CONSISTING OF MOUSE VARIABLE REGIONS AND HUMAN CONSTANT REGIONS HAS THE SAME AFFINITY FOR ANTIGEN AS THE ORIGINAL MOUSE ANTIBODY.  
 67) 05'CL: PATHOGENIC AUTOANTIBODY PRODUCED BY NEPHRITIS PRONE (SWR X NZB)F1 (SNF1) MOUSE.  
 68) 11'CL: PATHOGENIC AUTOANTIBODY PRODUCED BY NEPHRITIS PRONE (SWR X NZB)F1 (SNF1) MOUSE.  
 69) 12'CL: PATHOGENIC AUTOANTIBODY PRODUCED BY NEPHRITIS PRONE (SWR X NZB)F1 (SNF1) MOUSE.  
 72) 13'CL: PATHOGENIC AUTOANTIBODY PRODUCED BY NEPHRITIS PRONE (SWR X NZB)F1 (SNF1) MOUSE.  
 73) 30'CL: PATHOGENIC AUTOANTIBODY PRODUCED BY NEPHRITIS PRONE (SWR X NZB)F1 (SNF1) MOUSE.  
 74) 2B2'CL: THE SEQUENCE WAS OBTAINED FROM TRANSLATING THE NUCLEOTIDE SEQUENCE OF mRNA OF HYBRIDOMA FROM ADULT MOUSE 7 DAYS AFTER IMMUNIZATION.  
 75) 12C4'CL: THE SEQUENCE WAS OBTAINED BY TRANSLATING THE NUCLEOTIDE SEQUENCE OF mRNA OF HYBRIDOMA FROM ADULT MOUSE 7 DAYS AFTER IMMUNIZATION.  
 77) 7B6'CL: THE SEQUENCE WAS OBTAINED BY TRANSLATING THE NUCLEOTIDE SEQUENCE OF mRNA OF HYBRIDOMA FROM ADULT MOUSE 7 DAYS AFTER IMMUNIZATION.  
 82) 6G11'CL: THE SEQUENCE WAS OBTAINED BY TRANSLATING THE NUCLEOTIDE SEQUENCE OF mRNA OF HYBRIDOMA FROM ADULT MOUSE 7 DAYS AFTER IMMUNIZATION.  
 84) T3C'CL: ANTI-IDIOTYPE ANTIBODY-RESISTANT VARIANT CELL LINE DERIVED FROM B CELL LYMPHOMA 38C13. TUMOR CELL ESCAPE DUE TO RE-REARRANGEMENT OF THE 38C13 TUMOR CELL IgKAPPA LOCUS.  
 85) L8'CL: THE SPLICING OUT OF THE INTRON OCCURS AT POSITION -6 INSTEAD OF THE USUAL POSITION -4.  
 86) S107B'CL: THE SPLICING OUT OF THE INTRON OCCURS AT POSITION -6 INSTEAD OF THE USUAL POSITION -4.  
 87) T2E(1)'CL: ANTI-IDIOTYPE ANTIBODY-RESISTANT VARIANT CELL LINE DERIVED FROM B CELL LYMPHOMA 38C13. TUMOR CELL ESCAPE DUE TO RE-REARRANGEMENT OF THE 38C13 TUMOR CELL IgKAPPA LOCUS.  
 90) V-K10 ARS-A'CL: TERMINATION CODON AT POSITION -13.  
 93) 2B1'CL: A CHIMERIC ANTIBODY IS CONSTRUCTED FROM THE MOUSE V-REGION AND HUMAN C-KAPPA REGION.  
 100) 38C13V'CL: ANTI-IDIOTYPE ANTIBODY-RESISTANT VARIANT CELL LINE DERIVED FROM B CELL LYMPHOMA 38C13. TUMOR CELL ESCAPE DUE TO RE-REARRANGEMENT OF THE 38C13 TUMOR CELL IgKAPPA LOCUS.  
 104) RFT2'CL: THE VARIABLE REGIONS OF LIGHT AND HEAVY CHAINS OF THIS HYBRIDOMA HAS BEEN JOINED TO CONSTANT REGIONS OF HUMAN KAPPA AND IgG1 (ENCODING ALLOTYPE nGm(z) and nGm(a)) TO FORM A CHIMERIC ANTI-LYMPHOCYTE MONOCLONAL ANTIBODY, CHT2; SD2 214-380. RFT2 and CHT2 SHOWED IDENTICAL TISSUE REACTIVITY.  
 126) E225'CL: IT REACTS WITH A PRIVATE IDIOTYPE OF THE ANTI-LYSOZYME ANTIBODY D1.3.  
 127) MPC11: THE TRANSLATED AMINO ACID SEQUENCE FROM NUCLEOTIDE SEQUENCE OF MPC11 AGREES WITH THIS.  
 129) CEA 66-E3'CL: THIS ANTIBODY IS SYNTHESIZED IN ESCHERICHIA COLI.  
 131) CEM231.6.7'CL: IT IS A MOUSE/HUMAN CHIMERIC ANTIBODY WITH MOUSE VARIABLE REGION AND HUMAN IgG1-KAPPA CONSTANT REGION.  
 133) 86.2'CL: THE V-REGIONS WERE USED TO CONSTRUCT A MURINE/HUMAN CHIMERIC ANTIBODY.  
 138) L7'CL: THE AUTHORS SUGGESTED THAT IT IS ALSO POSSIBLE TO SPLICE AT A DIFFERENT POSITION TO GIVE GLY AT POSITION -4 AND NO RESIDUE AT POSITIONS -3 TO -1.  
 140) 87.92.6'CL: MONOClonAL ANTI-IDIOTYPE ANTIBODY AGAINST THE 9B.G5 ANTIBODY SPECIFIC FOR THE VIRUS NEUTRALIZING EPITOPE ON THE MAMMALIAN REOVIRUS TYPE 3 HEMAGGLUTININ. IT EXPRESSES AN INTERNAL IMAGE OF THE RECEPTOR BINDING EPITOPE OF REOVIRUS TYPE 3, AND ALSO HAS AUTOIMMUNE REACTIVITY TO THE CELL SURFACE RECEPTOR OF REOVIRUS.  
 142) 10C11'CL: THE SEQUENCE WAS OBTAINED BY TRANSLATING THE NUCLEOTIDE SEQUENCE OF mRNA OF HYBRIDOMA FROM ADULT MOUSE 7 DAYS AFTER IMMUNIZATION.  
 143) 18G6'CL: THE SEQUENCE WAS OBTAINED BY TRANSLATING THE NUCLEOTIDE SEQUENCE OF mRNA OF HYBRIDOMA FROM ADULT MOUSE 7 DAYS AFTER IMMUNIZATION.  
 146) 5G11'CL: THE SEQUENCE WAS OBTAINED BY TRANSLATING THE NUCLEOTIDE SEQUENCE OF mRNA OF HYBRIDOMA FROM ADULT MOUSE 7 DAYS AFTER IMMUNIZATION.  
 147) 14B4'CL: THE SEQUENCE WAS OBTAINED BY TRANSLATING THE NUCLEOTIDE SEQUENCE OF mRNA OF HYBRIDOMA FROM ADULT MOUSE 7 DAYS AFTER IMMUNIZATION.  
 149) GB10'CL: THE SEQUENCE WAS OBTAINED BY TRANSLATING THE NUCLEOTIDE SEQUENCE OF mRNA OF HYBRIDOMA FROM ADULT MOUSE 7 DAYS AFTER IMMUNIZATION.  
 150) 4F10'CL: THE SEQUENCE WAS OBTAINED BY TRANSLATING THE NUCLEOTIDE SEQUENCE OF mRNA OF HYBRIDOMA FROM ADULT MOUSE 7 DAYS AFTER IMMUNIZATION.  
 155) 4F2'CL: ISOLATED 7 DAYS AFTER PRIMARY IMMUNIZATION.  
 155) 3F2'CL: ISOLATED 7 DAYS AFTER PRIMARY IMMUNIZATION.

5 SCHECHTER, I. (1977)  
 392-2400. (CHECKED BY  
 . 6 SCHECHTER, I. (1978).

## SPECIFIC NOTES: SIGNAL PEPTIDES OF MOUSE KAPPA LIGHT CHAINS (cont'd)

156) 12610'CL: ISOLATED 7 DAYS AFTER PRIMARY IMMUNIZATION.

157) 10610'CL: ISOLATED 7 DAYS AFTER PRIMARY IMMUNIZATION.

158) 3E3'CL: ISOLATED 7 DAYS AFTER PRIMARY IMMUNIZATION.

159) 13D4'CL: ISOLATED 7 DAYS AFTER PRIMARY IMMUNIZATION.

160) 9G6'CL: ISOLATED 7 DAYS AFTER PRIMARY IMMUNIZATION.

161) 3B6'CL: ISOLATED 7 DAYS AFTER PRIMARY IMMUNIZATION.

162) 11G3'CL: ISOLATED 7 DAYS AFTER PRIMARY IMMUNIZATION.

163) 564'CL: PATHOGENIC AUTOANTIBODY PRODUCED BY NEPHRITIS PRONE (SWR X NZB)F1 (SNF1) MOUSE.

164) 550'CL: PATHOGENIC AUTOANTIBODY PRODUCED BY NEPHRITIS PRONE (SWR X NZB)F1 (SNF1) MOUSE.

165) 563'CL: PATHOGENIC AUTOANTIBODY PRODUCED BY NEPHRITIS PRONE (SWR X NZB)F1 (SNF1) MOUSE.

169) 567'CL: PATHOGENIC AUTOANTIBODY PRODUCED BY NEPHRITIS PRONE (SWR X NZB)F1 (SNF1) MOUSE.

170) 10.4'CL: ANTI-IDIOTYPE ANTIBODY-RESISTANT VARIANT CELL LINE DERIVED FROM B CELL LYMPHOMA 38C13. TUMOR CELL ESCAPE DUE TO RE-REARRANGEMENT OF THE 38C13 TUMOR CELL IgKAPPA LOCUS.

171) 3C5'CL: THE SEQUENCE WAS OBTAINED BY TRANSLATING THE NUCLEOTIDE SEQUENCE OF mRNA OF HYBRIDOMA FROM ADULT MOUSE 7 DAYS AFTER IMMUNIZATION.

174) 2H7'CL: IS A MOUSE ANTIBODY WHOSE VARIABLE REGIONS HAVE BEEN JOINED TO HUMAN IgG1 AND KAPPA CONSTANT REGIONS.

THE RESULTING CHIMERIC MONOCLOINAL ANTIBODY HAS STRONG ANTIBODY-DEPENDENT CELLULAR CYTOTOXICITY WITH HUMAN EFFECTOR CELLS AND COMPLEMENT-DEPENDENT CYTOTOXICITY WITH HUMAN COMPLEMENT.

176) 2C7'CL: THE SEQUENCE WAS OBTAINED BY TRANSLATING THE NUCLEOTIDE SEQUENCE OF mRNA OF HYBRIDOMA FROM ADULT MOUSE 7 DAYS AFTER IMMUNIZATION.

180) MPC11C: THIS SEGMENT IS CONNECTED DIRECTLY TO THE KAPPA LIGHT CHAIN CONSTANT REGION.

186) 9IA3'CL: TERMINATION CODON AT POSITION -13.

188) MPC41A: THE AMINO ACID SEQUENCE TRANSLATED FROM THE DNA SEQUENCE (SEIDMAN, J.G., MAX, E.E. &amp; LEADER, P. (1979) NATURE, 280, 370-375.) HAS GLU AT POSITION -5.

## SIGNAL PEPTIDES OF MOUSE LAMBDA L

INVARIANT RESIDUES	1 2 3 4			
	MOPC 104E	KL-SJA 83.12	RPC 20	IG 3C LAMBI CL
-21	---	---	---	---
-20	MET	MET	MET	MET
-19	ALA	ALA	ALA	ALA
-18	TRP	TRP	TRP	TRP
-17	ILE	ILE	ILE	ILE
-16	SER	SER	SER	SE
-15	LEU	LEU	LEU	LE
-14	ILE	ILE	ILE	LE
-13	LEU	LEU	LEU	LE
-12	SER	SER	SER	SE
-11	---	---	---	---
-10	LEU	LEU	LEU	LE
-9	LEU	LEU	LEU	LE
-8	ALA	ALA	ALA	AI
-7	LEU	LEU	LEU	LE
-6	SER	SER	SER	SI
-5	SER	SER	SER	SI
-4	GLY	GLY	GLY	GLY
-3	ALA	ALA	ALA	AI
-2	ILE	ILE	ILE	I
-1	SER	SER	SER	SI

## VARIABILITY

-21	1.
-20	1.
-19	1.
-18	1.
-17	3.4
-16	2.2
-15	1.
-14	2.2
-13	2.2
-12	2.2
-11	2.2
-10	2.2
-9	2.2
-8	2.2
-7	2.2
-6	3.4
-5	1.
-4	2.2
-3	2.2
-2	4.5
-1	1.

+ THE FOLLOWING WERE EQUALLY AND MOST FREQUENTLY OCCURRING:

AT POSITION	RESIDUES
-19	(MET, GLN)

## SIGNAL PEPTIDES OF MOUSE LAMBDA LIGHT CHAINS

INARIANT RESIDUES	SEQUENCES												# OF AMINO ACIDS	# OF OCCURRENCES OF MOST COMMON AMINO ACID
	1 MOPC 104E	2 KL-SJA 83.12	3 RPC	4 IG 303	5 IG 99	6 S43	7 MOPC	8 MES-	9 SPE	10 VL Y31	11 HOPC	12 MOPC CL -1'	13 CL 315-26	
	'CL'	'CL'	'CL'	'CL'	'CL'	'CL'	'CL'	'CL'	'CL'	'CL'	'CL'	'CL'	'CL'	'CL'
-21														
-20	MET	MET	MET	MET	MET	MET	MET	MET	MET	MET	MET	MET	MET	12 (MET)
-19	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	11 (ALA)
-18	TRP	GEP	GEP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	12 (TRP)
-17		ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	7 (ILE)
-16		SER	SER	SER	SER	SER	SER	SER	SER	PRO	SER	SER	SER	11 (SER)
-15	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	12 (LEU)
-14		ILE	IIS	ILE	ILE	ILE	ILE	ILE	ILE	PHE	ILE	ILE	ILE	11 (ILE)
-13	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	PHE	LEU	LEU	LEU	11 (LEU)
-12		SER	SER	SER	SEU	SER	SER	SER	SER	PHE	SER	SER	SER	11 (SER)
-11														
-10	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	PHE	LEU	LEU	LEU	11 (LEU)
-9		LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	VAL	LEU	LEU	LEU	11 (LEU)
-8	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	11 (ALA)
-7		LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	HIS	LEU	LEU	LEU	11 (LEU)
-6		SER	SER	SER	SER	SER	SER	CYS	CYS	CYS	SER	CYS	CYS	7 (SER)
-5	GLY	GUY	GUY	GUY	GUY	GUY	GUY	GUY	GUY	SER	GER	GER	GER	12 (SER)
-4		ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	12 (GLY)
-3		ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	SER	ALA	ALA	ALA	11 (ALA)
-2										PHE	ILE	SER	SER	8 (ILE)
-1	SER.	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	12 (SER)

J. P. (1979) NATURE, 280,

## VARIABILITY

-21	1.
-20	1.
-19	1.
-18	1.
-17	3.4
-16	2.2
-15	1.2
-14	2.2
-13	2.2
-12	2.2
-11	
-10	2.2
-9	2.2
-8	2.2
-7	2.2
-6	3.4
-5	1.
-4	1.
-3	2.2
-2	4.5
-1	1.

## REFERENCE: SIGNAL PEPTIDES OF MOUSE LAMBDA LIGHT CHAINS

- 1) MOPC104E: BURSTEIN,Y. & SCHECHTER,I. (1977) PROC.NAT.ACAD.SCI.USA,74,716-720. (CHECKED BY AUTHOR)  
 2) KL-SJA83.12'CL: WEISS,S., LEHMANN,K. & COHN,M. (1985) EUR.J. IMMUNOL.,15,768-772.  
 3) RPC20: BURSTEIN,Y. & SCHECHTER,I. (1978) BIOCHEMISTRY,17,2392-2400. (CHECKED BY AUTHOR)  
 4) IG 303LAMBDA'CL: BERNARD,O., HOZUMI,N. & TONEGAWA,S. (1978) CELL,15,1133-1144. (CHECKED BY AUTHOR 08/06/79)  
 5) IG 99LAMBDA'CL: BERNARD,O., HOZUMI,N. & TONEGAWA,S. (1978) CELL,15,1133-1144. (CHECKED BY AUTHOR 08/06/79)  
 6) S43'CL: BOTHWELL,A.L.M., PASKIND,M., RETH,M., IMANISHI-KARI,T., RAJENSKY,K. & BALTIMORE,D. (1982) NATURE,298,380-382.  
 (CHECKED BY AUTHOR 01/31/83)  
 7) MOPC315: BURSTEIN,Y. & SCHECHTER,I. (1977) BIOCHEM.J.,165,347-354; BURSTEIN,Y. & SCHECHTER,I. (1978) BIOCHEMISTRY,17,  
 2392-2400. (CHECKED BY AUTHOR 08/29/79)  
 8) WES-IG13'CL: TONEGAWA,S., MAXAM,A.M., TIZARD,R., BERNARD,O. & GILBERT,W. (1978) PROC.NAT.ACAD.SCI.USA,75,1485-1489.  
 (CHECKED BY AUTHOR 08/06/79)  
 9) SPE VL'CL: MAMI,F. & KINTD,T.J. (1987) IMMUNOGENET.,26,291-295.  
 10) Y31'CL: SANCHEZ,P., MARCHE,P.N., LE GUERN,C. & CAZENAVE,P.-A. (1987) PROC.NATL.ACAD.SCI.USA,84,9185-9188; SANCHEZ,P.,  
 MARCHE,P.N., RUEFF-JUJ,D. & CAZENAVE,P.-A. (1980) J. IMMUNOL.,144,2816-2820.  
 11) MOPC-1'CL: ALONSO,A., HOZUMI,N. & MURIALDO,H. (1985) J. IMMUNOL.,135,1,614-619. (CHECKED BY AUTHOR 09/26/85)  
 12) MOPC315-26'CL: WU,G.E., GOVINDJI,N., HOZUMI,V. & MURIALDO,H. (1982) NUC.ACIDS RES.,10,3831-3843. (CHECKED BY AUTHOR  
 05/30/83)

## GENERAL NOTES: SIGNAL PEPTIDES OF MOUSE LAMBDA LIGHT CHAINS

THE NUCLEOTIDE SEQUENCES OF DIFFERENT CLONES CONTAIN AN INTERVENING SEQUENCE OF NONTRANSLATED BASES OF VARYING LENGTHS.  
 THE SPLICING OUT OF THESE INTRONS COULD OCCUR BETWEEN AMINO ACID POSITIONS -5 AND -4, OR -4 AND -3, OR WITHIN POSITION -4.  
 HOWEVER, IF THE SPLICING REQUIRES GT AT THE 5'-END AND AG AT THE 3'-END OF THE INTRON, THIS WOULD DEFINE THE JOINING AS  
 OCCURRING WITHIN THE CODON OF AMINO ACID RESIDUE -4. THE INTRON SIZES OF DIFFERENT SEQUENCES ARE LISTED BELOW:

CLONE:	SOURCE:	INTRON SIZE:
S43'CL	MOUSE MYELOMA CDNA	
IG303LAMBDA'CL	MOUSE H2020 MYELOMA DNA	93
IG99LAMBDA'CL	MOUSE EMBRYO DNA	93
WES-IG13'CL	MOUSE EMBRYO DNA	93
MOPC315-26'CL'	MOUSE MYELOMA DNA	93
243'CL	CHICKEN SPLEEN CELL CDNA	

## SPECIFIC NOTES: SIGNAL PEPTIDES OF MOUSE LAMBDA LIGHT CHAINS

- 7) MOPC315: IT HAS ALSO BEEN SEQUENCED BY OTHERS (JILKA,R.L. & RESTKA,S. (1979) J.BIOL.CHEM.,254,9270-9276); THEY FOUND  
 SER AT POSITION -1 INSTEAD OF ALA AT POSITION -2. INSTEAD OF SER, THE LISTED SEQUENCE IS IN AGREEMENT  
 WITH THAT TRANSLATED FROM THE NUCLEOTIDE SEQUENCE OF A CLONE OF MOUSE MYELOMA CDNA (BOTHWELL,A.L.M., PASKIND,M.,  
 RETH,M., IMANISHI-KARI,T., RAJENSKY,K. & BALTIMORE,D. (1982) NATURE,298,380-382).  
 10) Y31'CL: THIS IS A NEW MOUSE LAMBDA LIGHT CHAIN GENE DESIGNATED AS lambda x.

SIGNAL PEPTIDES OF MISCELLANEOUS		
INVARIANT RESIDUES	1 YTH	2 IR- 3 Y3'-AG
34,SHL	102	1,2,3
'CL		
-29	---	---
-28	---	---
-27	---	---
-26	---	---
-25	---	---
-24	---	MET
-23	---	GLY
-22	---	VAL
-21	MET	ARG
-20	MET	ME
-19	ALA	GLU
-18	ALA	SER
-17	LEU	HIS
-16	GLN	THR
-15	LEU	TYR
-14	LEU	VAL
-13	GLY	PHE
-12	VAL	PHE
-11	ALA	PHE
-10	ALA	LEU
-9	SER	LEU
-8	SER	TRP
-7	SER	LEU
-6	SER	SER
-5	GLN	SER
-4	ALA	GLY
-3	MET	THR
-2	ARG	ASP
-1	CYS	GLY

## SIGNAL PEPTIDES OF MISCELLANEOUS KAPPA LIGHT CHAINS

INARIANT RESIDUES	1 YTH 'CL	2 IR- 'CL	3 Y3-Ag 'CL	4 IR- 52 'CL	5 IR- 487A 'CL	6 IR- 487B 'CL	7 V18A 'CL	8 V20 'CL	9 17D9 'CL	10 V19A 'CL	11 V19B 'CL	12 V19B 'CL	13 RMM 'CL	14 12F2 'CL	15 12F2 'CL	16 RAB 'CL	17 HORNED SHARK 'CL	# OF SEQUENCES	# OF AMINO ACIDS
08/06/79)	-29	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	1
08/06/79)	-28	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	9	9
URE, 298, 380-382.	-27	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	8	8
78) BIOCHEMISTRY, 17,	-26	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	12	12
A, 75, 1485-1489.	-25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	1
5-9188; SANCHEZ, P.,	-24	---	MET	GLY	---	---	---	---	---	---	---	---	---	---	---	---	---	1	1
09/26/85)	-23	---	---	VAL	---	---	MET	MET	MET	MET	MET	MET	MET	MET	MET	THR	---	9	9
(CHECKED BY AUTHOR	-22	---	---	---	---	---	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	THR	---	8	8
ES OF VARYING LENGTHS. WITHIN POSITION -4. ONE THE JOINING AS BED BELOW:	-21	MET	ARG	---	MET	MET	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	THR	---	12	12
	-20	MET	MET	MET	MET	MET	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	10	10
	-19	ALA	GLU	GLU	MET	---	---	---	---	---	---	---	---	---	---	---	---	10	4
	-18	ALA	SER	SER	---	---	---	---	---	---	---	---	---	---	---	---	---	9	2
	-17	LEU	HIS	GLR	PRO	---	---	---	---	---	---	---	---	---	---	---	---	10	4
	-16	GLN	THR	THR	---	---	---	---	---	---	---	---	---	---	---	---	---	10	4
	-15	LEU	ARG	GLN	---	---	---	---	---	---	---	---	---	---	---	---	---	10	4
	-14	LEU	VAL	VAL	LEU	---	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	15	2
	-13	GLY	PHE	---	LEU	LEU	---	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	17	3
	-12	VAL	ILE	MET	GLY	GLY	---	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	14	2
	-11	ALA	PHE	SER	LEU	---	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	15	2
	-10	ALA	LEU	LEU	LEU	LEU	---	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	17	2
	-9	SER	LEU	LEU	LEU	LEU	---	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	17	2
	-8	SER	LEU	LEU	LEU	LEU	---	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	17	2
	-7	GLY	TRP	TRP	---	---	---	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	12	2
	-6	SER	LEU	ILE	LEU	---	---	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	15	4
	-5	GLN	SER	SER	PRO	---	---	---	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	14	4
	-4	ALA	GLY	GLY	GLY	GLY	---	GLY	ASP	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	16	3
	-3	MET	THR	THR	MET	---	---	---	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	14	6
	-2	ARG	ASP	CYS	---	---	---	---	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	13	4
	-1	CYS	GLY	GLY	---	---	---	---	CYS	CYS	CYS	CYS	CYS	CYS	CYS	CYS	CYS	13	4

0-9276.); THEY FOUND  
ENCE IS IN AGREEMENT  
LL, A.L.M., PASKIND, M.,

**PRECURSOR OF:**

- 1) YTH 34.5KL'CL: RAT KAPPA LIGHT CHAIN
  - 2) IR-102: RAT KAPPA LIGHT CHAIN OF IR-102
  - 3) Y3-Ag 1.2 .3 .'CL: RAT KAPPA LIGHT CHAIN
  - 4) IR-52: RAT KAPPA LIGHT CHAIN OF IR-52
  - 5) IR-487A: RAT KAPPA LIGHT CHAIN OF IR-487 (2 DIFFERENT PRECURSORS)
  - 6) IR-487B: RAT KAPPA LIGHT CHAIN OF IR-487 (2 DIFFERENT PRECURSORS)
  - 7) V18A'CL: RABBIT KAPPA LIGHT CHAIN
  - 8) V20'CL: RABBIT KAPPA LIGHT CHAIN
  - 9) 17D9'CL: RABBIT KAPPA LIGHT CHAIN
  - 10) V19A'CL: RABBIT KAPPA LIGHT CHAIN
  - 11) V18B'CL: RABBIT KAPPA LIGHT CHAIN
  - 12) 3CB'CL: RABBIT KAPPA LIGHT CHAIN
  - 13) V19B'CL: RABBIT KAPPA LIGHT CHAIN
  - 14) RMB 12F2: RABBIT KAPPA LIGHT CHAIN
  - 15) 12F2 B2'CL: RABBIT KAPPA LIGHT CHAIN
  - 16) RAB B5'CL: RABBIT KAPPA LIGHT CHAIN
  - 17) HORNERED SHARK 1122'CL: HORNERED SHARK KAPPA LIGHT CHAIN

REFERENCE: SIGNAL PEPTIDES OF MISCELLANEOUS KAPPA LIGHT CHAINS

- 1) YTH 34.5HL'CL: RIECHMANN, L., CLARK, M., WALDMANN, H. & WINTER, G. (1988) NATURE, 332, 323-327.
  - 2) IR-102: BURSTEIN, Y., BAZIN, R. & SCHECHTER, I. (1979) ISRAEL J.MED.SCI., 15, 101-102; SCHECHTER, I., WOLF, O., ZEMELL, R. & BURSTEIN, Y. (1979) FED. PROC., 38, 1839-1845. (CHECKED BY AUTHOR 08/29/79)
  - 3) Y3-Ag 1.2.3.'CL: CROME, J.S., SMITH, M. A. & COOPER, H.J. (1989) NUCL.ACIDS RES., 17, 7992.
  - 4) IR-52: BURSTEIN, Y., BAZIN, H., ZIV, E., KANTOR, F. & SCHECHTER, I. (1982) BIOCHEM.BIOPHYS.RES.COMMUN., 105, 1408-1415. (CHECKED BY AUTHOR 12/15/82)
  - 5) IR-487A: BURSTEIN, Y., BAZIN, H., ZIV, E., KANTOR, F. & SCHECHTER, I. (1982) BIOCHEM.BIOPHYS.RES.COMMUN., 105, 1408-1415. (CHECKED BY AUTHOR 12/15/82)
  - 6) IR-487B: BURSTEIN, Y., BAZIN, H., ZIV, E., KANTOR, F. & SCHECHTER, I. (1982) BIOCHEM.BIOPHYS.RES.COMMUN., 105, 1408-1415. (CHECKED BY AUTHOR 12/15/82)
  - 7) V18A'CL: HEIDMANN, O. & ROUGEON, F. (1984) NATURE, 311, 74-76.
  - 8) V20'CL: LIEBERMAN, R., EMORINE, L. & MAX, E.E. (1984) J. IMMUN., 133, 5, 2753-2756.
  - 9) 17D9'CL: MCCARTNEY-FRANCIS, N., SKURLA, R.M., JR., MAGE, R.E. & BERNSTEIN, K.E. (1984) PROC.NAT.ACAD.SCI.USA, 81, 1794-1798.
  - 10) V19A'CL: HEIDMANN, O. & ROUGEON, F. (1984) NATURE, 311, 74-76.
  - 11) V18B'CL: HEIDMANN, O. & ROUGEON, F. (1984) NATURE, 311, 74-76.
  - 12) 3C8'CL: BERNSTEIN, K.E., LAMOYI, E., MCCARTNEY-FRANCIS, N., MAGE, R.G. (1984) J. EXP.MED., 159, 635-640.
  - 13) V19B'CL: HEIDMANN, O. & ROUGEON, F. (1984) NATURE, 311, 74-76.
  - 14) RMH 12F2': DREHER, K.L., SOGN, J.A., GATES, F.T., III, KUO, M.C. & KINDT, T.J. (1983) J. IMMUNOL., 130, 442-448.
  - 15) 12F2' CL: HEIDMANN, O., AUFRAY, C., CAZENAVE, P. & ROUGEON, F. (1981) PROC.NAT.ACAD.SCI.USA, 78, 5802-5806; DREHER, K.L., EMORINE, L., SOGN, J.A., GATES, F.T., III, KUO, M.C. & KINDT, T.J. (1983) J. IMMUNOL., 130, 442-448. (CHECKED BY AUTHOR 07/01/83)
  - 16) RAB BS'CL: BERNSTEIN, K.E., SKURLA, R.M., JR., MAGE, R.G., (1983) NUC.ACIDS RES., 11, 7205-7214.
  - 17) HORNER SHARK 1122 CL: SHAMBLOTT, M.J. & LITMAN, G.W. (1989) EMBR. J., 8, 3733-3739.

GENERAL NOTES: SIGNAL PEPTIDES OF MISCELLANEOUS KAPPA LIGHT CHAINS

**THE NUCLEOTIDE SEQUENCES OF DIFFERENT CLONES CONTAIN AN INTERVENING SPONGE OF NONTRANSLATED BASES OF VARYING LENGTHS. THE SPLICING OUT OF THESE INTRONS COULD OCCUR BETWEEN AMINO ACID POSITIONS 5 AND 4, OR 4 AND 3, OR WITHIN POSITION 4. HOWEVER, IF THE SPLICING REQUIRES GT AT THE 5'-END AND AG AT THE 3'-END OF THE INTRON, THIS WOULD DEFINE THE JOINING AS OCCURRING WITHIN THE CODON OF AMINO ACID RESIDUE 4. THE INTRON SIZES OF DIFFERENT SEQUENCES ARE LISTED BELOW:**

CLONE:	SOURCE:	INTRON SIZE:
HK100'CL	HUMAN FETAL LIVER DNA	118
HK101'CL	HUMAN FETAL LIVER DNA	125
HK102'CL	HUMAN FETAL LIVER DNA	125
MOPC173B'CL	MOUSE ADULT DNA	121
S107B'CL	MOUSE ADULT MYELOMA DNA	175
L8'CL	MOUSE ADULT LIVER DNA	175
K2'CL	MOUSE EMBRYO DNA	118
MPC11'CL	MOUSE ADULT DNA	242
VKAPPAl67'CL	MOUSE ADULT LIVER DNA	365
L6'CL	MOUSE ADULT LIVER DNA	113
L7'CL	MOUSE ADULT LIVER DNA	206
T1'CL	MOUSE ADULT MYELOMA DNA	113
T2'CL	MOUSE ADULT MYELOMA DNA	215
VT1/B'CL	MOUSE ADULT MYELOMA DNA	113
VTNP'CL	MOUSE HYBRIDOMA DNA	177

**SPECIFIC NOTES: SIGNAL PEPTIDES OF MISCELLANEOUS KAPPA LIGHT CHAINS**

- 14) RMH 12F2: THIS IS OBTAINED FROM A RABBIT-MOUSE HYBRIDOMA (RMH).  
 15) 12F2 B' CL: POSITIONS -22,-14,-13,-11 TO -8 WERE DETERMINED BY AMINO ACID SEQUENCING. THE CONSTANT REGION IS CALLED RABBIT K1B4'CL. THE AUTHORS ALSO CALL THIS SEQUENCE PB4D5.

## SIGNAL PEPTIDES OF MISCELLAN

INVARARIANT RESIDUES	RAT VL	1 CL	2 CL	3 CL	VFL3 %
MET	---	MET	MET	MET	
		THR	ALA	ALA	
		CYS	CYS	CYS	
		THR	THR	THR	
LEU	SER	PRO	PRO	PRO	
LEU	LEU	LEU	LEU	LEU	
LEU	LEU	HEU	PEU	LEU	
LEU	LEU	LEU	LEU	LEU	
LEU	ILE	LEU	LEU	LEU	
LEU	---	LEU	LEU	LEU	
	LEU	THR	THR	THR	
	LEU	LEU	LEU	LEU	
	ALA	LEU	LEU	LEU	
	VAL	GLN	GLN	GLN	
	CYS	CYS	CYS	SER	
	SER	THR	THR	THR	
	GLY	GLY	GLY	GLY	
	ALA	SER	SER	SER	
	ILE	LEU	LEU	LEU	
	SER	SER	SER	SER	
CLONE	22	23	24	25	
BE	CLONE	CLONE	CLONE	CHICK	
'CL	'CL	'CL	'CL	'CL	
1					
0					
-1					
5	SER	SER	SER	PR	
-4	LEU	LEU	LEU	AR	
-3	VAL	VAL	VAL	AR	
-2	GLN	GLN	GLN	AS	
-1	ALA	ALA	ALA	AS	

## SIGNAL PEPTIDES OF MISCELLANEOUS LAMBDA LIGHT CHAINS

INARIANT RESIDUES	1 RAT 'CL	2 Pdh7 'CL	3 rVL3 'CL	4 Pdh8 'CL	5 rVL2 'CL	6 G4 'CL	7 GERM- LINE 'CL	8 S11 'CL	9 IgL 'CL	10 B19/g1 'CL	11 bu 'CL	12 sp 'CL	13 243 'CL	14 H18 'CL	15 H13 'CL	16 H11 'CL	17 bu 'CL	18 bu 'CL	19 bu 'CL	20 PSLC 'CL	21 SHEEP CHICKEN LAMBDA 'CL	
-21	MET	---	---	---	---	MET															---	MET
-20		MET	MET	MET	MET																MET	ALA
-19		THR	ALA	ALA	ALA																ALA	TRP
-18		CYS	CYS	CYS	CYS																TRP	ALA
-17		THR	THR	THR	THR																SER	PRO
-16		SER	PRO	PRO	PRO																PRO	LEU
-15	LEU	LEU	LEU	LEU	LEU																LEU	LEU
-14	LEU	LEU	LEU	LEU	LEU																LEU	ALA
-13	LEU	LEU	LEU	LEU	LEU																ALA	VAL
-12	ILE	LEU	LEU	LEU	LEU																VAL	VAL
-11	LEU	---	DEU	LEU	DEU																---	LEU
-10		LEU	THR	THR	THR																LEU	ALA
-9		LEU	LEU	LEU	LEU																HIS	HIS
-8		ALA	LEU	LEU	LEU																ALA	THR
-7		VAL	GLN	GLN	GLN																LEU	SER
-6		CYS	CYS	SER	CYS																CYS	GLY
-5		GLA	GLY	GLY	GLY																GLY	SER
-4		GLA	GLY	GLY	GLY																CYS	GLY
-3		ALA	SER	SER	SER																GLY	LEU
-2		ILE	LEU	LEU	LEU																VAL	VAL
-1		SER	SER	SER	SER	SER															VAL	VAL

OLF.O., ZEMELL, R. &amp;

105,1408-1415. (CHECKED)

..105,1408-1415.

..105,1408-1415.

CI.USA.81.1794-1798.

48.  
802-5806; DREHER, K.L.;  
, SOGN, J.A.; GATES, F.T.; III,  
ASES OF VARYING LENGTHS.  
OR WITHIN POSITION -4.  
REFINE THE JOINING AS  
LISTED BELOW:

	22 CLONE 'CL	23 CLONE 'CL	24 CLONE 'CL	25 CHICKEN 'CL	26 CHICKEN 'CL	27 CHICKEN 'CL	# OF SEQUENCES	# OF AMINO ACIDS
E5	5	12	V1	V2	V3			
	'CL	'CL	'CL	'CL	'CL			
-21							3	2
-20							8	3
-19							8	3
-18							8	3
-17							8	3
-16							8	3
-15							9	1
-14							9	1
-13							11	2
-12							11	4
-11							9	1
-10							11	3
-9							11	3
-8							11	3
-7							12	4
-6	SER	SER	SER	PRO	SER	ALA	12	3
-5	LEU	LEU	LEU	ARG	LEU	TYR	27	4
-4	VAL	VAL	VAL	LEU	VAL	SER	27	4
-3	GLN	GLN	GLN	TRP	GLN	ARG	27	5
-2								
-1	ALA	ALA	ALA	ASP	ALA	GLY	27	4

STANT REGION IS CALLED

## PRECURSOR OF:

- 1) RAT VL'CL: RAT LAMBDA LIGHT CHAIN
- 2) pDB7'CL: BASILEA RABBIT LAMBDA LIGHT CHAIN
- 3) rVL3'CL: RABBIT LAMBDA LIGHT CHAIN
- 4) pDB8'CL: BASILEA RABBIT LAMBDA LIGHT CHAIN
- 5) rVL2'CL: RABBIT LAMBDA LIGHT CHAIN
- 6) G4'CL: CHICKEN LAMBDA LIGHT CHAIN
- 7) G4'GERMLINE'CL: CHICKEN LAMBDA LIGHT CHAIN
- 8) S11'CL: CHICKEN LAMBDA LIGHT CHAIN
- 9) IgL'CL: CHICKEN LAMBDA LIGHT CHAIN
- 10) B19/g1'CL: CHICKEN LAMBDA LIGHT CHAIN
- 11) bu 36'CL: CHICKEN LAMBDA LIGHT CHAIN
- 12) sp 126'CL: CHICKEN LAMBDA LIGHT CHAIN
- 13) 243'CL: CHICKEN LAMBDA LIGHT CHAIN
- 14) H18'CL: CHICKEN LAMBDA LIGHT CHAIN
- 15) H13'CL: CHICKEN LAMBDA LIGHT CHAIN
- 16) H11'CL: CHICKEN LAMBDA LIGHT CHAIN
- 17) bu 24'CL: CHICKEN LAMBDA LIGHT CHAIN
- 18) bu 2'CL: CHICKEN LAMBDA LIGHT CHAIN
- 19) sp 1'CL: CHICKEN LAMBDA LIGHT CHAIN
- 20) SHEEP pSLC'CL: SHEEP LAMDA CHAIN
- 21) CHICKEN LAMBDA 1'CL: CHICKEN LAMBDA LIGHT CHAIN
- 22) CLONE 85'CL: CHICKEN LAMBDA LIGHT CHAIN
- 23) CLONE 5'CL: CHICKEN LAMBDA LIGHT CHAIN
- 24) CLONE 12'CL: CHICKEN LAMBDA LIGHT CHAIN
- 25) CHICKEN V1'CL: CHICKEN V1 IN PSEUDOGENES OF VARIABLE REGION
- 26) CHICKEN V2'CL: CHICKEN V2 IN PSEUDOGENES OF VARIABLE REGION
- 27) CHICKEN V3'CL: CHICKEN V3 IN PSEUDOGENES OF VARIABLE REGION

## REFERENCE: SIGNAL PEPTIDES OF MISCELLANEOUS LAMBDA LIGHT CHAINS

- 1) RAT VL'CL: STEEN, M.-L., HELLMAN, L. & PETTERSSON, U. (1987) GENE, 55, 75-84.
- 2) pDB7'CL: HAYZER, D.J. & JATON, J.-C. (1987) J. IMMUNOL., 138, 2316-2322. (CHECKED BY AUTHOR 07/13/87)
- 3) rVL3'CL: HAYZER, D.J. & JATON, J.-C. (1989) GENE, 80, 185-191.
- 4) pDB8'CL: HAYZER, D.J. & JATON, J.-C. (1989) GENE, 80, 185-191.
- 5) rVL2'CL: HAYZER, D.J. & JATON, J.-C. (1989) GENE, 80, 185-191.
- 6) G4'CL: KIM, S., HUMPHRIES, E.H., TJOELKER, L., CARLSON, L. & THOMPSON, C.B. (1990) MOL.CELL.BIOL., 10, 3224-3231.
- 7) G4'GERMLINE'CL: KIM, S., HUMPHRIES, E.H., TJOELKER, L., CARLSON, L. & THOMPSON, C.B. (1990) MOL.CELL.BIOL., 10, 3224-3231.
- 8) S11'CL: PARVARI, R., ZIV, E., LENTNER, F., TEL-OR, S., BURSTEIN, Y. & SCHECHTER, I. (1987) EMBO J., 6, 97-102.
- 9) IgL'CL: MCCORMACK, W.T., TJOELKER, L.W., CARLSON, L.M., PETRYNIK, B., BARTH, C.F., HUMPHRIES, E.H. & THOMPSON, C.B. (1989) CELL, 56, 785-791.
- 10) B19/g1'CL: PARVARI, R., ZIV, E., LANTNER, F., HELLER, D. & SCHECHTER, I. (1990) PROC.NATL.ACAD.SCI.USA, 87, 3072-3076.
- 11) bu 36'CL: PARVARI, R., ZIV, E., LANTNER, F., HELLER, D. & SCHECHTER, I. (1990) PROC.NATL.ACAD.SCI.USA, 87, 3072-3076.
- 12) sp 126'CL: PARVARI, R., ZIV, E., LANTNER, F., HELLER, D. & SCHECHTER, I. (1990) PROC.NATL.ACAD.SCI.USA, 87, 3072-3076.
- 13) 243'CL: REYNAUD, C.A., DAHAN, A. & WEILL, J.C. (1983) PROC.NATL.ACAD.SCI.USA, 80, 4099-4103. (CHECKED BY AUTHOR 02/22/85)
- 14) H18'CL: PARVARI, R., ZIV, E., LENTNER, F., TEL-OR, S., BURSTEIN, Y. & SCHECHTER, I. (1987) EMBO J., 6, 97-102.
- 15) H13'CL: PARVARI, R., ZIV, E., LENTNER, F., TEL-OR, S., BURSTEIN, Y. & SCHECHTER, I. (1987) EMBO J., 6, 97-102.
- 16) H11'CL: PARVARI, R., ZIV, E., LENTNER, F., TEL-OR, S., BURSTEIN, Y. & SCHECHTER, I. (1987) EMBO J., 6, 97-102.
- 17) bu 24'CL: PARVARI, R., ZIV, E., LANTNER, F., HELLER, D. & SCHECHTER, I. (1990) PROC.NATL.ACAD.SCI.USA, 87, 3072-3076.
- 18) bu 2'CL: PARVARI, R., ZIV, E., LANTNER, F., HELLER, D. & SCHECHTER, I. (1990) PROC.NATL.ACAD.SCI.USA, 87, 3072-3076.
- 19) sp 1'CL: PARVARI, R., ZIV, E., LANTNER, F., HELLER, D. & SCHECHTER, I. (1990) PROC.NATL.ACAD.SCI.USA, 87, 3072-3076.
- 20) SHEEP pSLC'CL: FOLEY, R.C. & BEH, K.J. (1989) J. IMMUNOL., 142, 708-711.
- 21) CHICKEN LAMBDA 1'CL: REYNAUD, C.-A., ANQUEZ, V., DAHAN, A. & WEILL, J.-C. (1985) CELL, 40, 283-291.
- 22) CLONE 85'CL: KIM, S., HUMPHRIES, E.H., TJOELKER, L., CARLSON, L. & THOMPSON, C.B. (1990) MOL.CELL.BIOL., 10, 3224-3231.
- 23) CLONE 5'CL: KIM, S., HUMPHRIES, E.H., TJOELKER, L., CARLSON, L. & THOMPSON, C.B. (1990) MOL.CELL.BIOL., 10, 3224-3231.
- 24) CLONE 12'CL: KIM, S., HUMPHRIES, E.H., TJOELKER, L., CARLSON, L. & THOMPSON, C.B. (1990) MOL.CELL.BIOL., 10, 3224-3231.
- 25) CHICKEN V1'CL: REYNAUD, C.-A., ANQUEZ, V., DAHAN, A. & WEILL, J.-C. (1985) CELL, 40, 283-291.
- 26) CHICKEN V2'CL: REYNAUD, C.-A., ANQUEZ, V., DAHAN, A. & WEILL, J.-C. (1985) CELL, 40, 283-291.
- 27) CHICKEN V3'CL: REYNAUD, C.-A., ANQUEZ, V., DAHAN, A. & WEILL, J.-C. (1985) CELL, 40, 283-291.

## GENERAL NOTES: SIGNAL PEPTIDES OF MISCELLANEOUS LAMBDA LIGHT CHAINS

THE NUCLEOTIDE SEQUENCES OF DIFFERENT CLONES CONTAIN AN INTERVENING SEQUENCE OF NONTRANSLATED BASES OF VARYING LENGTHS. THE SPLICING OUT OF THESE INTRONS COULD OCCUR BETWEEN AMINO ACID POSITION -3 AND -4 OR -4 AND -5 WITH POSITION -4. HOWEVER, IF THE SPLICING REQUIRES GT AT THE 5'-END AND AG AT THE 3'-END OF THE INTRON, THIS WOULD DEFINE THE JOINING AS OCCURRING WITHIN THE CODON OF AMINO ACID RESIDUE -4. THE INTRON SIZES OF DIFFERENT SEQUENCES ARE LISTED BELOW:

CLONE:	SOURCE:	INTRON SIZE:
S43'CL	MOUSE MYELOMA CDNA	
IG303LAMBDA'CL	MOUSE H2020 MYELOMA DNA	93
IG99LAMBDA'CL	MOUSE EMBRYO DNA	93
WES-IG13'CL	MOUSE EMBRYO DNA	93
MOPC315-26'CL'	MOUSE MYELOMA DNA	93
243'CL	CHICKEN SPLEEN CELL CDNA	

## SPECIFIC NOTES: SIGNAL PEPTIDES OF MISCELLANEOUS LAMBDA LIGHT CHAINS

- 2) pDB7'CL: ISOLATED FROM SPLEEN OF BASILEA RABBIT HYPERIMMUNIZED WITH TYPE II PNEUMOCOCCAL POLYSACCHARIDE.
- 3) S11'CL: FROM cDNA OF CHICKEN SPLEEN.
- 4) H18'CL: FROM cDNA OF CHICKEN HARDER GLAND (A GLAND ENRICHED WITH IMMUNOCYTES).
- 5) H13'CL: FROM cDNA OF CHICKEN HARDER GLAND (A GLAND ENRICHED WITH IMMUNOCYTES).
- 6) H11'CL: FROM cDNA OF CHICKEN HARDER GLAND (A GLAND ENRICHED WITH IMMUNOCYTES).
- 20) SHEEP pSLC'CL: TRANSLATED FROM cDNA OF SHEEP LYMPHOCYTES

## SIGNAL PEPTIDES OF HUMAN HEAVY

INVARIANT RESIDUES	1	2	3	4
	21-2	21	21	21-2
	'CL	'CL	'CL	'CL

-20	MET	MET	MET	MET
-19	ASP	ASP	ASP	N
-18	TRP	TRP	TRP	T
-17	THR	THR	THR	T
-16	TRP	TRP	TRP	T
-15	ARG	ARG	ARG	P
-14	ILE	ILE	ILE	
-13	LEU	LEU	LEU	
-12	PHE	PHE	PHE	
-11	---	---	---	
-10	LEU	LEU	LEU	LEU
-9	VAL	VAL	VAL	VAL
-8	ALA	ALA	ALA	ALA
-7	ALA	ALA	ALA	ALA
-6	ALA	ALA	ALA	ALA
-5	THR	THR	THR	GLN
-4	ARG	GLY	GLY	G
-3	VAL	ALA	ALA	V
-2	HIS	HIS	HIS	CYS
-1	SER	SER	SER	ALA

22	23	24	25
ND	1B9/F2	71-5	VH251
'CL	'CL	'CL	'CL

-20	MET	MET	MET	MET
-19	ASP	ASP	ASP	GLY
-18	TRP	TRP	TRP	SER
-17	THR	THR	ILE	THR
-16	TRP	TRP	TRP	ALA
-15	---	SER	ARG	ILE
-14	ILE	ILE	ILE	LEU
-13	LEU	LEU	LEU	ALA
-12	PHE	PHE	PHE	LEU
-11	---	---	---	
-10	LEU	LEU	LEU	LEU
-9	VAL	VAL	VAL	VAL
-8	ALA	ALA	ALA	ALA
-7	ALA	ALA	ALA	ALA
-6	ALA	ALA	ALA	ALA
-5	THR	THR	THR	GLN
-4	ARG	GLY	GLY	G
-3	VAL	ALA	ALA	V
-2	LEU	LEU	LEU	LEU
-1	SER	SER	SER	ALA

43	44	45	46	47
C6B2	5B2	SUP	T1	'CL
'CL	'CL	VH-JA	'CL	'CL

-20	MET	MET	MET	MET
-19	LYS	LYS	LYS	L
-18	HIS	HIS	HIS	HIS
-17	LEU	LEU	LEU	LEU
-16	TRP	TRP	TRP	TRP
-15	PHE	PHE	PHE	PHE
-14	PHE	PHE	PHE	PHE
-13	LEU	LEU	LEU	LEU
-12	LEU	LEU	LEU	LEU
-11	---	---	---	
-10	LEU	LEU	LEU	LEU
-9	VAL	VAL	VAL	V
-8	ALA	ALA	ALA	ALA
-7	ALA	ALA	ALA	ALA
-6	PRO	PRO	PRO	PRO
-5	ARG	ARG	ARG	P
-4	TRP	TRP	TRP	TRP
-3	VAL	VAL	VAL	V
-2	LEU	LEU	LEU	LEU
-1	SER	SER	SER	SER

66	67	68	69
Ab25	RF-KL1	Ab21	VH38
'CL	'CL	'CL	'CL

-20	MET	MET	MET	MET
-19	GLU	GLU	GLU	GLU
-18	SHE	PHE	PHE	PHE
-17	GLY	GLY	GLY	GLY
-16	LEU	LEU	LEU	LEU
-15	SER	SER	ARG	SER
-14	TRP	TRP	TRP	TRP
-13	LEU	LEU	LEU	LEU
-12	PHE	PHE	PHE	PHE
-11	---	---	---	
-10	LEU	LEU	LEU	LEU
-9	VAL	VAL	VAL	V
-8	ALA	ALA	ALA	ALA
-7	ILE	ILE	ILE	ILE
-6	LEU	LEU	LEU	LEU
-5	LYS	LYS	LYS	LYS
-4	GLY	GLY	GLY	GLY
-3	VAL	VAL	VAL	VAL
-2	GLN	GLN	GLN	GLN
-1	CYS	CYS	CYS	CYS

## SIGNAL PEPTIDES OF HUMAN HEAVY CHAINS

INVARIANT RESIDUES	1 'CL	2 'CL	3 'CL	4 'CL	5 'CL	6 'CL	7 'CL	8 'CL	9 'CL	10 'CL	11 'CL	12 'CL	13 'CL	14 'CL	15 'CL	16 'CL	17 'CL	18 'CL	19 'CL	20 'CL	21 'CL
1-20 MET	MET	MET	MET	MET	MET	MET	MET	MET	MET	MET	MET										
-19 ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP										
-18 TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP										
-17 THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR										
-16 TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP										
-15 ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG										
-14 VAL	VAL	VAL	ILE	ILE	ILE	VAL	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	
-13 PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE										
-12 CYS	CYS	CYS	PHE	PHE	CYS	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	
-11 ---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
-10 LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU										
-9 LEU	LEU	LEU	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL								
-8 ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA										
-7 VAL	VAL	VAL	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA								
-6 ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA										
-5 PRO	PRO	PRO	THR	THR	THR	PRO	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	
-4 GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY										
-3 ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA											
-2 HIS	HIS	HIS	HIS	HIS	HIS	HIS	HIS	HIS	HIS	HIS											
-1 SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER											

INVARIANT RESIDUES	1 'CL	2 'CL	3 'CL	4 'CL	5 'CL	6 'CL	7 'CL	8 'CL	9 'CL	10 'CL	11 'CL	12 'CL	13 'CL	14 'CL	15 'CL	16 'CL	17 'CL	18 'CL	19 'CL	20 'CL	21 'CL
1-20 MET	MET	MET	MET	MET	MET	MET	MET	MET	MET	MET	MET										
-19 ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP										
-18 TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP										
-17 THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR										
-16 TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP										
-15 ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG										
-14 VAL	VAL	VAL	ILE	ILE	ILE	VAL	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	
-13 ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA										
-12 PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE										
-11 ---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
-10 LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU										
-9 ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA										
-8 ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA										
-7 ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA										
-6 ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA										
-5 PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO										
-4 GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY										
-3 ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA										
-2 HIS	HIS	HIS	HIS	HIS	HIS	HIS	HIS	HIS	HIS	HIS	HIS										
-1 SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER										

INVARIANT RESIDUES	22 'CL	23 'CL	24 'CL	25 'CL	26 'CL	27 'CL	28 'CL	29 'CL	30 'CL	31 'CL	32 'CL	33 'CL	34 'CL	35 'CL	36 'CL	37 'CL	38 'CL	39 'CL	40 'CL	41 'CL	42 'CL	
1-20 ND	189	192	21	25	26	27	28	29	30	21	lambda	OMM	6-1G1	15P1	FK-001	VHVI	VH6	Ab26	1-9II	12G-1	71-2	71-4
1-20 P2																						

INVARIANT RESIDUES	43 'CL	44 'CL	45 'CL	46 'CL	47 'CL	48 'CL	49 'CL	50 'CL	51 'CL	52 'CL	53 'CL	54 'CL	55 'CL	56 'CL	57 'CL	58 'CL	59 'CL	60 'CL	61 'CL	62 'CL	63 'CL	64 'CL	65 'CL
1-20 C6B2	C6B2	58P2	SUP-T1	11	79	Pag-1	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65
1-20 VR-JA	'CL																						

INVARIANT RESIDUES	66 'CL	67 'CL	68 'CL	69 'CL	70 'CL	71 'CL	72 'CL	73 'CL	74 'CL	75 'CL	76 'CL	77 'CL	78 'CL	79 'CL	80 'CL	81 'CL	82 'CL	83 'CL	84 'CL	85 'CL	86 'CL	87 'CL	88 'CL		
1-20 RF-KL1	RF	KL1	Ab21	VH38	H11	12	13	12	38P1	Ab18	Gf4	8-1B	v65-4	77	78-1	79	80	81	82	83	84	85	86	87	88
1-20 CL	'CL	'CL																							

INVARIANT RESIDUES	66 'CL	67 'CL	68 'CL	69 'CL	70 'CL	71 'CL	72 'CL	73 'CL	74 'CL	75 'CL	76 'CL	77 'CL	78 'CL	79 'CL	80 'CL	81 'CL	82 'CL	83 'CL	84 'CL	85 'CL	86 'CL	87 'CL	88 'CL
1-20 MDF	MDF	MDF	MDF	MDF	MET																		
1-19 GLU	GLU																						
1-18 PHE	PHE																						
1-17 GLY	GLY																						
1-16 LEU	LEU																						
1-15 SER	SER	SER	ARG	SER																			
1-14 TRP	TRP																						
1-13 LEU	LEU																						
1-12 PHE	PHE																						
1-11 ---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-10 LEU	LEU																						
1-9 VAL	VAL																						
1-8 ALA	ALA																						
1-7 ILE	ILE																						
1-6 LEU	LEU																						
1-5 LYS	LYS																						
1-4 GLY	GLY																						
1-3 VAL	VAL																						
1-2 GLN	GLN	GLN	GLN																				

## SIGNAL PEPTIDES OF HUMAN HEAVY CHAINS (cont'd)

	89 KIM46H	90 FL2-2	91 RF-SJ2	92 RF-TS2	93 RF-SJ1	94 HN.14	95 333	96 1B11	97 112	98 VH10.7	99 K616	100 K488	101 K588	102 K5GS	103 KSC7	104 K6F5	105 Ly47	106 Ly91	107 CE-V201	108 114
	'CL	'CL	'CL	'CL	'CL	'CL	'CL	'CL	'CL	'CL	'CL	'CL	'CL	'CL	'CL	'CL	'CL	'CL	'CL	
-20		MET	MET	MET	MET	MET	MET	MET	MET	MET	MET	MET	MET	MET	MET	MET	MET	MET	MET	
-19		GLU	GLU	GLU	GLU	GLU	GLU	GLU	GLU	GLU	GLU	GLU	GLU	GLU	GLU	GLU	GLU	GLU	GLU	GLU
-18		PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	CYS	
-17		GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	THR
-16		LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	TRP
-15		SER	SER	SER	SER	SER	THR	THR	SER	SER	SER	SER	SER	SER	SER	SER	ASN	SER	GLY	
-14		TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	ILE	ILE
-13		VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	ARG	
-12		PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	
-11		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
-10		LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU
-9		VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL
-8		ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	GLY	ALA	ALA
-7		LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	ILE	ILE	ILE	ILE	ILE	ILE	PHE	ILE	ALA	ALA
-6		LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	ALA	ALA
-5		ARG	ARG	ARG	ARG	ARG	LYS	LYS	LYS	LYS	LYS	LYS	LYS	LYS	LYS	LYS	LYS	LYS	THR	THR
-4		GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	ASP	GLY
-3		VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	MET	VAL	VAL
-2		GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	HIS	GLN	GLN	HIS	HIS	HIS
-1		CYS	CYS	CYS	CYS	CYS	CYS	CYS	CYS	CYS	CYS	CYS	CYS	CYS	CYS	CYS	CYS	SER	SER	SER

# OF SEQUENCES # OF AMINO ACIDS OCCURRENCES OF MOST COMMON AMINO ACID VARIABILITY

-20	94	1	94 (MET)	1.
-19	95	6	38 (GLU)	15.
-18	96	6	36 (PHE)	24.
-17	96	6	40 (GLY)	14.
-16	96	6	42 (LEU)	14.
-15	95	10	41 (SER)	23.
-14	98	6	41 (TRP)	14.
-13	99	6	55 (LEU)	11.
-12	99	3	67 (SER)	4.4
-11	4	2	3 (PRO)	2.7
-10	99	4	86 (LEU)	4.6
-9	99	4	83 (VAL)	4.8
-8	99	55	68 (ALA)	5.6
-7	99	58	39 (ALA)	20.
-6	99	5	46 (LEU)	11.
-5	100	10	30 (LYS)	33.
-4	101	66	77 (GLY)	3.9
-3	105	5	88 (VAL)	3.6
-2	107	5	53 (GLN)	10.
-1	108	4	56 (SER)	7.7

## PRECURSOR OF:

- 1) 21-2'CL: HUMAN HEAVY CHAINS SUBG
- 2) 3-1'CL: HUMAN HEAVY CHAINS SUBG
- 3) 1-92'CL: HUMAN HEAVY CHAINS SUBG
- 4) V35'CL: HUMAN HEAVY CHAINS SUBG
- 5) HC3'CL: HUMAN HEAVY CHAINS SUBG
- 6) K3-10'CL: HUMAN HEAVY CHAINS SUBG
- 7) WI12'CL: HUMAN HEAVY CHAINS SUBG
- 8) LS2'CL: HUMAN HEAVY CHAINS SUBG
- 9) LS5'CL: HUMAN HEAVY CHAINS SUBG
- 10) LS1'CL: HUMAN HEAVY CHAINS SUBG
- 11) LS4'CL: HUMAN HEAVY CHAINS SUBG
- 12) RF-TS3'CL: HUMAN HEAVY CHAINS SUBG
- 13) 51P1'CL: HUMAN HEAVY CHAINS SUBG
- 14) hv1263'CL: HUMAN HEAVY CHAINS SUBG
- 15) 783'CL: HUMAN HEAVY CHAINS SUBG
- 16) EV1-15'CL: HUMAN HEAVY CHAINS SUBG
- 17) X17115'CL: HUMAN HEAVY CHAINS SUBG
- 18) AB6'CL: HUMAN HEAVY CHAINS SUBG
- 19) NEI'CL: HUMAN HEAVY CHAINS SUBG
- 20) RF-TS1'CL: HUMAN HEAVY CHAINS SUBG
- 21) RP1'CL: HUMAN HEAVY CHAINS SUBG
- 22) RD'CL: HUMAN HEAVY CHAINS SUBG
- 23) 1B9/F2'CL: HUMAN HEAVY CHAINS SUBG
- 24) 71-5'CL: HUMAN HEAVY CHAINS SUBG
- 25) VH251'CL: HUMAN HEAVY CHAINS SUBG
- 26) 5-1R1'CL: HUMAN HEAVY CHAINS SUBG
- 27) VRAD'CL: HUMAN HEAVY CHAINS SUBG
- 28) WS1'CL: HUMAN HEAVY CHAINS SUBG
- 29) VH383ex'CL: HUMAN HEAVY CHAIN
- 30) 5-2RL'CL: HUMAN HEAVY CHAINS SUBG
- 31) lambda IGD-1'CL: HUMAN HEAVY CHAIN
- 32) OMM'CL: HUMAN HEAVY CHAINS SUBG
- 33) 6-1G1'CL: HUMAN HEAVY CHAINS SUBG
- 34) 15P1'CL: HUMAN HEAVY CHAINS SUBG
- 35) VK-001'CL: HUMAN HEAVY CHAIN
- 36) VEV1'CL: HUMAN HEAVY CHAINS SUBG
- 37) VR6'CL: HUMAN HEAVY CHAINS SUBG
- 38) AB26'CL: HUMAN HEAVY CHAINS SUBG
- 39) 1-9II'CL: HUMAN HEAVY CHAINS SUBG
- 40) 12G-1'CL: HUMAN HEAVY CHAINS SUBG
- 41) 71-2'CL: HUMAN HEAVY CHAINS SUBG
- 42) 71-4'CL: HUMAN HEAVY CHAINS SUBG
- 43) C6B2'CL: HUMAN HEAVY CHAINS SUBG
- 44) 58P2'CL: HUMAN HEAVY CHAINS SUBG
- 45) SUP-T1 VH-JA'CL: HUMAN HEAVY CHAIN
- 46) 11'CL: HUMAN HEAVY CHAINS SUBG
- 47) 79'CL: HUMAN HEAVY CHAINS SUBG
- 48) Pag-1'CL: HUMAN HEAVY CHAIN
- 49) HvVP'CL: HUMAN HEAVY CHAIN
- 50) HvVELYS'CL: HUMAN HEAVY CHAIN
- 51) HvVHCAMP'CL: HUMAN HEAVY CHAIN
- 52) BIG1'CL: HUMAN HEAVY CHAINS SUBG
- 53) TS2'CL: HUMAN HEAVY CHAINS SUBG
- 54) 2-1'CL: HUMAN HEAVY CHAINS SUBG
- 55) 58'CL: HUMAN HEAVY CHAINS SUBG
- 56) Fog-B'CL: HUMAN HEAVY CHAIN
- 57) 6H-3C4'CL: HUMAN HEAVY CHAIN
- 58) Ly65'CL: HUMAN HEAVY CHAIN
- 59) DR12910-2FB'CL: HUMAN HEAVY CHAIN
- 60) CR-1'CL: HUMAN HEAVY CHAIN
- 61) JBL2'CL: HUMAN HEAVY CHAIN
- 62) LAMBDA-VB26'CL: HUMAN HEAVY CHAIN
- 63) 4G12'CL: HUMAN HEAVY CHAIN
- 64) 30P1'CL: HUMAN HEAVY CHAIN
- 65) vh26c'CL: HUMAN HEAVY CHAIN
- 66) AB25'CL: HUMAN HEAVY CHAIN
- 67) RF-KL1'CL: HUMAN HEAVY CHAIN
- 68) Ab21'CL: HUMAN HEAVY CHAIN
- 69) VH38CL10'CL: HUMAN HEAVY CHAIN
- 70) HI1'CL: HUMAN HEAVY CHAIN
- 71) 12-2'CL: HUMAN HEAVY CHAIN
- 72) 13-2'CL: HUMAN HEAVY CHAIN
- 73) 36P1'CL: HUMAN HEAVY CHAIN
- 74) AB18'CL: HUMAN HEAVY CHAIN
- 75) GF4/1.1'CL: HUMAN HEAVY CHAIN
- 76) 8-1B'CL: HUMAN HEAVY CHAIN
- 77) v65-4'CL: HUMAN HEAVY CHAIN
- 78) 9-1'CL: HUMAN HEAVY CHAIN
- 79) 4B4'CL: HUMAN HEAVY CHAIN
- 80) 3D6'CL: HUMAN HEAVY CHAIN
- 81) 1-9III'CL: HUMAN HEAVY CHAIN
- 82) 60P2'CL: HUMAN HEAVY CHAIN
- 83) 63P1'CL: HUMAN HEAVY CHAIN
- 84) v65-2'CL: HUMAN HEAVY CHAIN
- 85) 22-2B'CL: HUMAN HEAVY CHAIN
- 86) 56P1'CL: HUMAN HEAVY CHAIN
- 87) 1-9IV'CL: HUMAN HEAVY CHAIN
- 88) 2P1'CL: HUMAN HEAVY CHAIN
- 89) KIM46H'CL: HUMAN HEAVY CHAIN
- 90) FL2-2'CL: HUMAN HEAVY CHAIN
- 91) RF-SJ2'CL: HUMAN HEAVY CHAIN
- 92) RF-TS2'CL: HUMAN HEAVY CHAIN
- 93) RF-SJ1'CL: HUMAN HEAVY CHAIN
- 94) HM-14'CL: HUMAN HEAVY CHAIN
- 95) 333'CL: HUMAN HEAVY CHAIN
- 96) 1B11'CL: HUMAN HEAVY CHAIN
- 97) 112'CL: HUMAN HEAVY CHAIN
- 98) VH10.7'CL: HUMAN HEAVY CHAIN
- 99) KGB6'CL: HUMAN HEAVY CHAIN
- 100) KGB8'CL: HUMAN HEAVY CHAIN
- 101) KGB6'CL: HUMAN HEAVY CHAIN
- 102) KGS5'CL: HUMAN HEAVY CHAIN
- 103) KSC7'CL: HUMAN HEAVY CHAIN

## PRECURSOR OF:

- 106 107 108  
 Ly91 CE- V201  
 CL 114 CL  
 MET MET  
 ASP ASP  
 PHE PHE  
 GLY THR  
 LEU TRP  
 SER GLY  
 TRP ILE ILE  
 VAL LEU ARG  
 PHE PHE PHE  
 --- ---  
 LEU LEU LEU  
 VAL VAL VAL  
 GLY ALA ALA  
 ILE ALA ALA  
 LEU ALA ALA  
 LYS THR THR  
 GLY ASP GLY  
 MET VAL VAL  
 GLN HIS HIS  
 CYS SER SER
- 1) 21-2'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 2) 3-1'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 3) 1-92'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 4) V25'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 5) EG3'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 6) E3-10'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 7) WIL2'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 8) LG2'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 9) LS5'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 10) LS1'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 11) LS4'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 12) RF-T83'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 13) 51P1'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 14) bv1263'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 15) 783c'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 16) EV1-15'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 17) XL7115'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 18) AND'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 19) WEI'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 20) RF-T81'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 21) HP1'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 22) ED'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 23) 1B9/P2'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 24) 71-5'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 25) VH251'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 26) 5-1R1'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 27) VDAU'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 28) WS1'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 29) Vh383cm'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 30) 5-2R1'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 31) Lambda-IGD-1'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 32) OMM'CL: HUMAN HEAVY CHAINS SUBGROUP I  
 33) 6-1G1'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 34) 1SP1'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 35) FR-001'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 36) VVVI'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 37) VH6'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 38) Ab26'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 39) 1-911'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 40) 12G-1'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 41) 71-2'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 42) 71-4'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 43) C6B2'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 44) 58P2'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 45) SUP-T1 VE-JA'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 46) 11'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 47) 79'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 48) Fag-1'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 49) HuVNP'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 50) HuVHLYS'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 51) HuVRCCAMP'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 52) HIG1'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 53) TS2'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 54) 2-1'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 55) 58'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 56) Fog-B'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 57) 6R-3C4'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 58) Ly66'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 59) DR12910-2P8'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 60) CS-1'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 61) JBL2'CL: HUMAN HEAVY CHAINS SUBGROUP II  
 62) LAMBDA-VB26'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 63) 4G12'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 64) 3OP1'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 65) VH26c'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 66) AB25'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 67) RF-KL1'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 68) AB21'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 69) VH38C1.10'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 70) H11'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 71) 12-2'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 72) 13-2'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 73) 3OP1'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 74) AB18'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 75) GF4/1.1'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 76) 8-1B'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 77) v65-4'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 78) 9-1'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 79) 4B4'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 80) 3D6'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 81) 1-91'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 82) 6OP2'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 83) 6SP1'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 84) v65-2'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 85) 22-2B'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 86) 56P1'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 87) 1-9III'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 88) 2P1'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 89) KIM46B'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 90) VL2-2'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 91) RF-S42'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 92) RF-T82'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 93) RF-S31'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 94) HN-14'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 95) 333'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 96) 1B11'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 97) 112'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 98) VH10.7'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 99) K6B6'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 100) K4B8'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 101) K5B8'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 102) K5G5'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 103) K5C7'CL: HUMAN HEAVY CHAINS SUBGROUP III

PRECURSOR OF: (cont'd)

- 104) K6F5'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 105) Ly47'CL: HUMAN HEAVY CHAINS SUBGROUP III  
 106) Ly91'CL: HUMAN HEAVY CHAINS SUBGROUP III

## REFERENCE: SIGNAL PEPTIDES OF HUMAN HEAVY CHAINS

- 1) 21-2'CL: BERMAN, J.E., MELLIS, S.J., POLLOCK, R., SMITH, C.L., SUH, H., HEINKE, B., KOWAL, C., SURTI, U., CHESS, L., CANTOR, C.R. & ALT, F.W. (1988) EMBO J., 7, 727-738.  
 2) 3-1'CL: BERMAN, J.E., MELLIS, S.J., POLLOCK, R., SMITH, C.L., SUH, H., HEINKE, B., KOWAL, C., SURTI, U., CHESS, L., CANTOR, C.R. & ALT, F.W. (1988) EMBO J., 7, 727-738.  
 3) 1-92'CL: BERMAN, J.E., MELLIS, S.J., POLLOCK, R., SMITH, C.L., SUH, H., HEINKE, B., KOWAL, C., SURTI, U., CHESS, L., CANTOR, C.R. & ALT, F.W. (1988) EMBO J., 7, 727-738.  
 4) V35'CL: MATSUDA, F., LEE, K.H., NAKAI, S., SATO, T., KODAIRA, M., ZONG, S.Q., OHNO, H., FUKUHARA, S. & HONJO, T. (1988) EMBO J., 7, 1047-1051.  
 5) EG3'-CL: RECHAVI, G., RAM, D., GLAZER, L., ZAKUT, R. & GIVOL, D. (1983) PROC.NAT.ACAD.SCI.USA, 80, 855-859. (CHECKED BY AUTHOR 01/04/83)  
 6) K3-10'CL: KODAIRA, M., KINASHI, T., UMEMURA, I., MATSUDA, F., NOMA, T., ONO, Y. & HONJO, T. (1986) J.MOL.BIOL., 190, 529-541.  
 7) WIL2'CL: KIPPS, T.J., TOMHAVE, E., PRATT, L.F., DUFFY, S., CHEN, P.P. & CARSON, D.A. (1989) PROC.NATL.ACAD.SCI.USA, 86, 5913-5917.  
 8) LS2'CL: SILBERSTEIN, L.E., LITWIN, S. & CARMACK, C.E. (1989) J.EXP.MED., 169, 1631-1643.  
 9) LS5'CL: SILBERSTEIN, L.E., LITWIN, S. & CARMACK, C.E. (1989) J.EXP.MED., 169, 1631-1643.  
 10) LS1'CL: SILBERSTEIN, L.E., LITWIN, S. & CARMACK, C.E. (1989) J.EXP.MED., 169, 1631-1643.  
 11) LS4'CL: SILBERSTEIN, L.E., LITWIN, S. & CARMACK, C.E. (1989) J.EXP.MED., 169, 1631-1643.  
 12) RF-T83'CL: PASCUAL, V., RANDEN, I., THOMPSON, K., SIODU, M., FORRE, O., NATVIG, J. & CAPRA, J.D. (1990) J.CLIN.INVEST., 86, 1320-1328.  
 13) SP1'CL: SCHROEDER, H.W., JR., HILLSON, J.L. & PERLMUTTER, R.M. (1987) SCIENCE, 238, 791-793; CHEN, P.P., LIU, M.-F., GLASS, C.A., SINHA, S., KIPPS, T.J. & CARSON, D.A. (1989) ARTHRITIS & RHEUMATISM, 32, 72-76.  
 14) hv1263'CL: CHEN, P.P., LIU, M.-F., GLASS, C.A., SINHA, S., KIPPS, T.J. & CARSON, D.A. (1989) ARTHRITIS & RHEUMATISM, 32, 72-76.  
 15) 783c'CL: CHEN, P.P., LIU, M.-F., GLASS, C.A., SINHA, S., KIPPS, T.J. & CARSON, D.A. (1989) ARTHRITIS & RHEUMATISM, 32, 72-76; KIPPS, T.J., TOMHAVE, E., PRATT, L.F., DUFFY, S., CHEN, P.P. & CARSON, D.A. (1989) PROC.NATL.ACAD.SCI.USA, 86, 5913-5917.  
 16) EV1-15'CL: NEWKIRK, M.M., GRAM, H., HEINRICH, G.F., OSTBERG, L., CAPRA, J.D. & WASSERMAN, R.L. (1988) J.CLIN.INVEST., 81, 1511-1518.  
 17) XI7115'CL: FRIEDLANDER, R.M., NUSENZWEIG, M.C. & LEDER, P. (1990) NUCL.ACIDS RES., 18, 4278.  
 18) AND'CL: KIPPS, T.J., TOMHAVE, E., PRATT, L.F., DUFFY, S., CHEN, P.P. & CARSON, D.A. (1989) PROC.NATL.ACAD.SCI.USA, 86, 5913-5917.  
 19) NE1'CL: KIPPS, T.J., TOMHAVE, E., PRATT, L.F., DUFFY, S., CHEN, P.P. & CARSON, D.A. (1989) PROC.NATL.ACAD.SCI.USA, 86, 5913-5917.  
 20) RF-T51'CL: PASCUAL, V., RANDEN, I., THOMPSON, K., SIODU, M., FORRE, O., NATVIG, J. & CAPRA, J.D. (1990) J.CLIN.INVEST., 86, 1320-1328.  
 21) HP1'CL: SHEN, A., HUMPHRIES, C., TUCKER, P. & BLATTNER, F. (1987) PROC.NATL.ACAD.SCI.USA, 84, 8563-8567.  
 22) ND'CL: KENTEN, J.H., HOLGAARD, H.V., HOUGHTON, M., DERBYSHIRE, R.B., VINYEY, J., BELL, L.O. & GOULD, H.J. (1982) PROC.NATL.ACAD.SCI.USA, 79, 6661-6665.  
 23) 1B9/F2'CL: CARROLL, W.L., YU, M., LINK, M.P. & KORMSEYER, S.J. (1989) J. IMMUNOL., 143, 692-698.  
 24) 71-5'CL: KODAIRA, M., KINASHI, T., UMEMURA, I., MATSUDA, F., NOMA, T., ONO, Y. & HONJO, T. (1986) J.MOL.BIOL., 190, 529-541.  
 25) VRH251'CL: HUMPHRIES, C.G., SHEN, A., KUZIEL, W.A., CAPRA, J.D., BLATTNER, F.R. & TUCKER, P.W. (1988) NATURE, 331, 446-449.  
 26) 5-1R1'CL: BERMAN, J.E., MELLIS, S.J., POLLOCK, R., SMITH, C.L., SUH, H., HEINKE, B., KOWAL, C., SURTI, U., CHESS, L., CANTOR, C.R. & ALT, F.W. (1988) EMBO J., 7, 727-738.  
 27) VHNU'CL: VAN DER HEIJDEN, R.W., BUNSCHOTEN, H., PASCUAL, V., UYTDEHAAG, F.G.C.M., OSTERHAUS, A.D.M.E. & CAPRA, J.D. (1990) J. IMMUNOL., 144, 2835-2839.  
 28) WS1'CL: SHEN, A., HUMPHRIES, C., TUCKER, P. & BLATTNER, F. (1987) PROC.NATL.ACAD.SCI.USA, 84, 8563-8567.  
 29) VH3823'CL: VAN DER HEIJDEN, R.W., BUNSCHOTEN, H., PASCUAL, V., UYTDEHAAG, F.G.C.M., OSTERHAUS, A.D.M.E. & CAPRA, J.D. (1990) J. IMMUNOL., 144, 2835-2839.  
 30) 5-2R1'CL: BERMAN, J.E., MELLIS, S.J., POLLOCK, R., SMITH, C.L., SUH, H., HEINKE, B., KOWAL, C., SURTI, U., CHESS, L., CANTOR, C.R. & ALT, F.W. (1988) EMBO J., 7, 727-738.  
 31) lambda IGD-1'CL: YASUI, H., AKARORI, Y., HIRANO, M., YAMADA, K. & KUROSAWA, Y. (1989) EUR.J. IMMUNOL., 19, 1399-1403.  
 32) CRM'CL: ALEXANDER, A., STEINMETZ, M., BARRITAULT, D., FRANGIONE, B., FRANKLIN, E.C., HOOD, L. & BUXBAUM, J.N. (1982) PROC.NATL.ACAD.SCI.USA, 79, 3260-3264. (CHECKED BY AUTHOR 06/17/83)  
 33) 6-1G1'CL: BERMAN, J.E., MELLIS, S.J., POLLOCK, R., SMITH, C.L., SUH, H., HEINKE, B., KOWAL, C., SURTI, U., CHESS, L., CANTOR, C.R. & ALT, F.W. (1988) EMBO J., 7, 727-738.  
 34) 1SP1'CL: SCHROEDER, H.W., JR., HILLSON, J.L. & PERLMUTTER, R.M. (1987) SCIENCE, 238, 791-793.  
 35) FK-001'CL: NAKATANI, T., NOMURA, N., HORIGOME, K., OHTSUKA, H. & NOGUCHI, H. (1989) BIO/TECH., 7, 805-810.  
 36) VHVI'CL: BULUWELA, L. & RABBITTS, T.H. (1988) EUR.J. IMMUNOL., 18, 1843-1845.  
 37) VE6'CL: SCHROEDER, H.W., JR., WALTER, M.A., HOFKER, M.H., EBENS, A., VAN DIJK, K.W., LILO, L.C., COX, D.W., MILNER, E.C.B. & PERLMUTTER, R.M. (1988) PROC.NATL.ACAD.SCI.USA, 85, 8196-8200.  
 38) Ab26'CL: SANZ, I., CASALI, P., THOMAS, J.W., NOTKINS, A.L. & CAPRA, J.D. (1989) J. IMMUNOL., 142, 4054-4061.  
 39) 1-9II'CL: BERMAN, J.E., MELLIS, S.J., POLLOCK, R., SMITH, C.L., SUH, H., HEINKE, B., KOWAL, C., SURTI, U., CHESS, L., CANTOR, C.R. & ALT, F.W. (1988) EMBO J., 7, 727-738.  
 40) 12G-1'CL: LEE, K.H., MATSUDA, F., KINASHI, T., KODAIRA, M. & HONJO, T. (1987) J.MOL.BIOL., 195, 761-768.  
 41) 71-2'CL: KODAIRA, M., KINASHI, T., UMEMURA, I., MATSUDA, F., NOMA, T., ONO, Y. & HONJO, T. (1986) J.MOL.BIOL., 190, 529-541.  
 42) 71-4'CL: KODAIRA, M., KINASHI, T., UMEMURA, I., MATSUDA, F., NOMA, T., ONO, Y. & HONJO, T. (1986) J.MOL.BIOL., 190, 529-541.  
 43) CG62'CL: HOCH, S. & SCHWABER, J. (1987) J. IMMUNOL., 139, 1689-1693.  
 44) 58P2'CL: SCHROEDER, H.W., JR., HILLSON, J.L. & PERLMUTTER, R.M. (1987) SCIENCE, 238, 791-793.  
 45) SUP-T1 VH-JA'CL: BAER, R., CHEN, K.-C., SMITH, S.D., BABBITS, T.H. (1985) CELL, 43, 705-713; DENNY, C.T., YOSHIKAI, Y., MAK, T.W., SMITH, S.D., HOLLIS, G.F. & KIRSCH, I.R. (1986) NATURE, 320, 549-551.  
 46) 11'CL: LEE, K.H., MATSUDA, F., KINASHI, T., KODAIRA, M. & HONJO, T. (1987) J.MOL.BIOL., 195, 761-768.  
 47) 79'CL: LEE, K.H., MATSUDA, F., KINASHI, T., KODAIRA, M. & HONJO, T. (1987) J.MOL.BIOL., 195, 761-768.  
 48) Pg-1'CL: HUGHES-JONES, N.C., BYE, J.M., BEALE, D. & COADWELL, J. (1990) BIOCHEM.J., 268, 135-140.  
 49) HvVNP'CL: JONES, P.T., DEAR, P.H., FOOTE, J., NEUBERGER, M.S. & WINTER, G. (1986) NATURE, 321, 522-525.  
 50) HvVHLY'S'CL: VERHOEYEN, M., MILSTEIN, C. & WINTER, G. (1988) SCIENCE, 239, 1534-1536.  
 51) HvVHCAMP'CL: RIECHMANN, L., CLARK, M., WALDMANN, H. & WINTER, G. (1988) NATURE, 332, 323-327.  
 52) HXG1'CL: KUDO, A., ISHIHARA, T., NISHIMURA, Y. & WATANABE, T. (1985) GENE, 33, 181-189. (CHECKED BY AUTHOR 10/01/85)  
 53) TS2'CL: SHEN, A., HUMPHRIES, C., TUCKER, P. & BLATTNER, F. (1987) PROC.NATL.ACAD.SCI.USA, 84, 8563-8567.  
 54) 2-1'CL: LEE, K.H., MATSUDA, F., KINASHI, T., KODAIRA, M. & HONJO, T. (1987) J.MOL.BIOL., 195, 761-768.  
 55) 58'CL: LEE, K.H., MATSUDA, F., KINASHI, T., KODAIRA, M. & HONJO, T. (1987) J.MOL.BIOL., 195, 761-768.  
 56) Fog-B'CL: HUGHES-JONES, N.C., BYE, J.M., BEALE, D. & COADWELL, J. (1990) BIOCHEM.J., 268, 135-140.  
 57) 68-3C4'CL: KOMORI, S., YAMASAKI, N., SHIGETA, M., ISOJIMA, S. & WATANABE, T. (1988) CLIN.EXP. IMMUNOL., 71, 508-516.  
 58) Ly66'CL: COGNE, M., MOUNIR, S., MAHDI, T., FREUD'HOMME, J.L., NAU, F. & GUGLIELMI, P. (1990) MOL. IMMUNOL., 27, 929-934.  
 59) DR12910-2F8'CL: LARRICK, J.W., DANIELSSON, L., BRENNER, C.A., WALLACE, E.F., ABRAMSON, M., FRY, K.E. & BORREBAECK, C.A.K. (1989) BIO/TECH., 7, 934-938.  
 60) CR-1'CL: TAKAHASHI, N., NOMA, T. & HONJO, T. (1984) PROC.NATL.ACAD.SCI.USA, 81, 5194-5198.  
 61) JBL2'CL: COGNE, M., MOUNIR, S., FREUD'HOMME, J.-L., NAU, F. & GUGLIELMI, P. (1988) EUR.J. IMMUNOL., 18, 1485-1489.  
 62) LAMBDA-VH25'CL: RABBITS, T.H., BENTLEY, D.L., DUNNICK, W., FORSTER, A., MATHYSSENS, G. & MILSTEIN, C. (1980) COLD SPRING HARB.SIMP. QUANT. BIOL., 45, 867-878. (CHECKED BY AUTHOR 12/09/80)  
 63) 4G12'CL: KISHIMOTO, T., OKAJIMA, H., OKUMOTO, T. & TANIGUCHI, M. (1989) NUCL.ACIDS RES., 17, 4385.  
 64) 30P1'CL: SCHROEDER, H.W., JR., HILLSON, J.L. & PERLMUTTER, R.M. (1987) SCIENCE, 238, 791-793; CHEN, P.P., LIU, M.-F., SINHA, S. & CARSON, D.N. (1988) ARTH.RHEUM., 31, 1429-1431.  
 65) vB26'CL: CHEN, P.P., LIU, M.-F., SINHA, S. & CARSON, D.A. (1988) ARTH.RHEUM., 31, 1429-1431.  
 66) Ab25'CL: SANZ, I., CASALI, P., THOMAS, J.W., NOTKINS, A.L. & CAPRA, J.D. (1989) J. IMMUNOL., 142, 4054-4061.  
 67) RF-KL1'CL: PASCUAL, V., RANDEN, I., THOMPSON, K., SIODU, M., FORRE, O., NATVIG, J. & CAPRA, J.D. (1990) J.CLIN.INVEST., 86, 1320-1328.  
 68) Ab21'CL: SANZ, I., CASALI, P., THOMAS, J.W., NOTKINS, A.L. & CAPRA, J.D. (1989) J. IMMUNOL., 142, 4054-4061.  
 69) VH3821.10'CL: MEEKER, T.C., GRIMALDI, J., O'ROURKE, R., LOEB, J., JULIUSSON, G. & EINHORN, S. (1988) J. IMMUNOL., 141, 3994-3998.  
 70) H11'CL: RECHAVI, G., BIENZ, B., RAM, D., BEN-NERIAH, Y., COHEN, J.B., ZAKUT, R. & GIVOL, D. (1982) PROC.NATL.ACAD.SCI.USA, 79, 4405-4409.  
 71) 12-2'CL: BERMAN, J.E., MELLIS, S.J., POLLOCK, R., SMITH, C.L., SUH, H., HEINKE, B., KOWAL, C., SURTI, U., CHESS, L., CANTOR, C.R. & ALT, F.W. (1988) EMBO J., 7, 727-738.  
 72) 13-2'CL: BERMAN, J.E., MELLIS, S.J., POLLOCK, R., SMITH, C.L., SUH, H., HEINKE, B., KOWAL, C., SURTI, U., CHESS, L., CANTOR, C.R. & ALT, F.W. (1988) EMBO J., 7, 727-738.  
 73) 38P1'CL: SCHROEDER, H.W., JR., HILLSON, J.L. & PERLMUTTER, R.M. (1987) SCIENCE, 238, 791-793.  
 74) AB18'CL: SANZ, I., CASALI, P., THOMAS, J.W., NOTKINS, A.L. & CAPRA, J.D. (1989) J. IMMUNOL., 142, 4054-4061.  
 75) GF4/1.1'CL: GILLIES, S.D., DORAI, H., WESOLOWSKI, J., MAJEAU, G., YOUNG, D., BOYD, J., GARDNER, J. & JAMES, K. (1989) BIO/TECH., 7, 793-804.  
 76) 8-1B'CL: BERMAN, J.E., MELLIS, S.J., POLLOCK, R., SMITH, C.L., SUH, H., HEINKE, B., KOWAL, C., SURTI, U., CHESS, L., CANTOR, C.R. & ALT, F.W. (1988) EMBO J., 7, 727-738.  
 77) vB5-4'CL: MATSUDA, F., SHIN, E.K., HIRABAYASHI, Y., NAGAOKA, H., YOSHIDA, M.C., ZONG, S.Q. & HONJO, T. (1990) EMBO J., 9, 2501-2506.  
 78) 9-1'CL: BERMAN, J.E., MELLIS, S.J., POLLOCK, R., SMITH, C.L., SUH, H., HEINKE, B., KOWAL, C., SURTI, U., CHESS, L., CANTOR, C.R. & ALT, F.W. (1988) EMBO J., 7, 727-738.  
 79) 4B4'CL: SANZ, I., DANG, H., TAKEI, M., TALAL, N. & CAPRA, J.D. (1989) J. IMMUNOL., 142, 883-887.

## REFERENCE: SIGNAL PEP'

- 80) 3D6'CL: FELGENHAUER, J.  
 81) 1-91'CL: BERMAN, J.E., F.W. (1988)  
 82) 60P2'CL: SCHROEDER, H.  
 83) 63P1'CL: SCHROEDER, H.  
 84) vB5-2'CL: MATSUDA, F.  
 85) 22-2B'CL: BERMAN, J.E., F.W. (1988)  
 86) 56P1'CL: SCHROEDER, H.  
 87) 1-9III'CL: BERMAN, J.E., F.W. (1988)  
 88) 2P1'CL: SCHROEDER, H.  
 89) KIM46B'CL: CAIRNS, E.  
 90) NL2-2'CL: NICKERSON.  
 91) RF-SJ2'CL: PASCUAL.  
 92) RF-TS2'CL: PASCUAL.  
 93) RF-SJ1'CL: COGNE, M.  
 94) HN-14'CL: DESAI, R.  
 95) 33'CL: CLEARY, M.L.  
 96) 1B11'CL: CLEARY, M.L.  
 97) 112'CL: CLEARY, M.L.  
 98) VH10.7'CL: WHITE, M.  
 99) K6H6'CL: KON, S., LE  
 100) K4B8'CL: KON, S., LE  
 101) K5B8'CL: KON, S., LE  
 102) K5G5'CL: KON, S., LE  
 103) K5C7'CL: KON, S., LE  
 104) K6F5'CL: KON, S., LE  
 105) Ly47'CL: COGNE, M.  
 106) Ly91'CL: COGNE, M.  
 107) CR-114'CL: TAKAHASHI  
 108) V201'CL: TAKAHASHI

## GENERAL NOTES: SIGI

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HOWEVER, IF THE SPLICI  
OCCURRING WITHIN THE C

## CLONE:

LAMBDA-CH26'CL

HG3'CL

OMM'CL

H11'CL

H16BR'CL

ND'CL

MOPC141H'CL

MC101'CL

S107'CL

VR441'CL

BCL1'CL

B1-8'CL

S43'CL

186-2'CL

186-1'CL

23'CL

3'CL

102'CL

145'CL

6'CL

93G7CRI+'CL

PCH105'CL

PCH108A'CL

PCH108B'CL

PCH104'CL

PCH111'CL

MOPC21H'CL

MOPC603H'CL

V1'CL

V11'CL

V13'CL

PMU3'CL

CAIMAN'CL

VH101'CL

- REFERENCE: SIGNAL PEPTIDES OF HUMAN HEAVY CHAINS (cont'd)
- 80) 3D6'CL: FELGENHAUER, M., KOHL, J. & RUKER, F. (1990) NUCL.ACIDS RES., 18,4927.  
 81) 1-91'CL: BERMAN, J.E., MELLIS, S.J., POLLOCK, R., SMITH, C.L., SUH, H., HEINKE, B., KOWAL, C., SURTI, U., CHESS, L., CANTOR, C.R. & ALT, F.W. (1988) EMBO J., 7, 727-738.
- 82) 60P2'CL: SCHROEDER, H.W., JR., HILLSON, J.L. & PERLMUTTER, R.M. (1987) SCIENCE, 238, 791-793.
- 83) 63P1'CL: SCHROEDER, H.W., JR., HILLSON, J.L. & PERLMUTTER, R.M. (1987) SCIENCE, 238, 791-793.
- 84) v65-2'CL: MATSUDA, F., SHIN, E.K., HIRABAYASHI, Y., NAGAOKA, H., YOSHIDA, M.C., ZONG, S.Q. & HONJO, T. (1990) EMBO J., 9, 2501-2506.
- 85) 22-2B'CL: BERMAN, J.E., MELLIS, S.J., POLLOCK, R., SMITH, C.L., SUH, H., HEINKE, B., KOWAL, C., SURTI, U., CHESS, L., CANTOR, C.R. & ALT, F.W. (1988) EMBO J., 7, 727-738.
- 86) 56P1'CL: SCHROEDER, H.W., JR., HILLSON, J.L. & PERLMUTTER, R.M. (1987) SCIENCE, 238, 791-793.
- 87) 1-9III'CL: BERMAN, J.E., MELLIS, S.J., POLLOCK, R., SMITH, C.L., SUH, H., HEINKE, B., KOWAL, C., SURTI, U., CHESS, L., CANTOR, C.R. & ALT, F.W. (1988) EMBO J., 7, 727-738.
- 88) 2P1'CL: SCHROEDER, H.W., JR., HILLSON, J.L. & PERLMUTTER, R.M. (1987) SCIENCE, 238, 791-793.
- 89) KIM46H'CL: CAIRNS, E., KWONG, P.C., MISENER, V., IP, P., BELL, D.A. & SIMINOVITCH, K.A. (1989) J. IMMUNOL., 143, 685-691.
- 90) FL2-2'CL: NICKERSON, K.G., BERMAN, J., GLICKMAN, E., CHESS, L. & ALT, F.W. (1989) J. EXP. MED., 169, 1391-1403.
- 91) RF-SJ2'CL: PASCUAL, V., RANDEN, I., THOMPSON, K., SIODU, M., FORRE, O., NATVIG, J. & CAPRA, J.D. (1990) J. CLIN. INVEST., 86, 1320-1328.
- 92) RF-TS2'CL: PASCUAL, V., RANDEN, I., THOMPSON, K., SIODU, M., FORRE, O., NATVIG, J. & CAPRA, J.D. (1990) J. CLIN. INVEST., 86, 1320-1328.
- 93) RF-SJ1'CL: PASCUAL, V., RANDEN, I., THOMPSON, K., SIODU, M., FORRE, O., NATVIG, J. & CAPRA, J.D. (1990) J. CLIN. INVEST., 86, 1320-1328.
- 94) HN-14'CL: DESAI, R., SPATZ, L., MATSUDA, T., ILYAS, A.A., BERMAN, J.E., ALT, F.W., KABAT, E.A. & LATOV, N. (1990) J. NEUROIMMUNOL., 26, 35-41.
- 95) 333'CL: CLEARY, M.L., MEEKER, T.C., LEVY, S., LEE, E., TRELA, M., SKLAR, J. & LEVY, R. (1986) CELL, 44, 97-106. (CHECKED BY AUTHOR 10/31/86)
- 96) 1B11'CL: CLEARY, M.L., MEEKER, T.C., LEVY, S., LEE, E., TRELA, M., SKLAR, J. & LEVY, R. (1986) CELL, 44, 97-106. (CHECKED BY AUTHOR 10/31/86)
- 97) 112'CL: CLEARY, M.L., MEEKER, T.C., LEVY, S., LEE, E., TRELA, M., SKLAR, J. & LEVY, R. (1986) CELL, 44, 97-106. (CHECKED BY AUTHOR 10/31/86)
- 98) VH10-7'CL: WHITE, M.B., WORD, C.J., HUMPHRIES, C.G., BLATTNER, F.R. & TUCKER, P.W. (1990) MOL.CELL.BIOL., 10, 3690-3699.
- 99) K6H6'CL: KON, S., LEVY, S. & LEVY, R. (1987) PROC.NATL.ACAD.SCI.USA, 84, 5053-5057.
- 100) K4B8'CL: KON, S., LEVY, S. & LEVY, R. (1987) PROC.NATL.ACAD.SCI.USA, 84, 5053-5057.
- 101) K5B8'CL: KON, S., LEVY, S. & LEVY, R. (1987) PROC.NATL.ACAD.SCI.USA, 84, 5053-5057.
- 102) K5G5'CL: KON, S., LEVY, S. & LEVY, R. (1987) PROC.NATL.ACAD.SCI.USA, 84, 5053-5057.
- 103) K5C7'CL: KON, S., LEVY, S. & LEVY, R. (1987) PROC.NATL.ACAD.SCI.USA, 84, 5053-5057.
- 104) K6F5'CL: KON, S., LEVY, S. & LEVY, R. (1987) PROC.NATL.ACAD.SCI.USA, 84, 5053-5057.
- 105) Ly47'CL: COGNE, M., MOUNIR, S., FREUD, HOMME, J.-L., NAU, F. & GUGLIELMI, P. (1988) EUR.J. IMMUNOL., 18, 1485-1489.
- 106) Ly91'CL: COGNE, M., MOUNIR, S., FREUD, HOMME, J.-L., NAU, F. & GUGLIELMI, P. (1988) EUR.J. IMMUNOL., 18, 1485-1489.
- 107) CE-114'CL: TAKAHASHI, N., NOMA, T. & HONJO, T. (1984) PROC.NAT.ACAD.SCI.USA, 81, 5194-5198.
- 108) V201'CL: TAKAHASHI, N., NOMA, T. & HONJO, T. (1984) PROC.NAT.ACAD.SCI.USA, 81, 5194-5198.

GENERAL NOTES: SIGNAL PEPTIDES OF HUMAN HEAVY CHAINS

The nucleotide sequences of different clones contain an intervening sequence of nontranslated bases of varying lengths. The splicing out of these introns could occur between amino acid positions -5 and -4, or -4 and -3, or within position -4. However, if the splicing requires GT at the 5'-end and AG at the 3'-end of the intron, this would define the joining as occurring within the codon of amino acid residue -4. The intron sizes of different sequences are listed below:

CLONE:	SOURCE:	INTRON SIZE:
LAMBDA-CH26'CL	HUMAN FETAL LIVER DNA	104
HG3'CL	HUMAN FETAL LIVER DNA	84
OMM'CL	HUMAN ADULT CELL LINE CDNA	
H11'CL	HUMAN PLACENTA DNA	102
H16BR'CL	HUMAN PLACENTA DNA	102
ND'CL	HUMAN MYELOMA 266BL CDNA	
MOPC141H'CL	MOUSE ADULT DNA	81
MC101'CL	MOUSE MYELOMA DNA	84
S107'CL	MOUSE ADULT CDNA	
VH441'CL	MOUSE EMBRYO DNA	101
BCL1'CL	MOUSE ADULT DNA	82
B1-8'CL	MOUSE ADULT HYBRIDOMA CDNA	
S43'CL	MOUSE ADULT HYBRIDOMA CDNA	
186-2'CL	MOUSE ADULT LIVER DNA	82
186-1'CL	MOUSE ADULT LIVER DNA	82
23'CL	MOUSE ADULT LIVER DNA	82
3'CL	MOUSE ADULT LIVER DNA	82
102'CL	MOUSE ADULT LIVER DNA	82
145'CL	MOUSE ADULT DNA	82
6'CL	MOUSE ADULT DNA	100
93G7CRI+CL	MOUSE HYBRIDOMA CDNA	
PCH105'CL	MOUSE EMBRYO DNA	82
PCH108A'CL	MOUSE EMBRYO DNA	83
PCH108B'CL	MOUSE EMBRYO DNA	83
PCH104'CL	MOUSE EMBRYO DNA	84
PCH111'CL	MOUSE EMBRYO DNA	83
MOPC21H'CL	MOUSE ADULT PLASMACYTOMA CDNA	
MOPC603H'CL	MOUSE ADULT DNA	
VI'CL	MOUSE SPERM DNA	
VI1'CL	MOUSE SPERM DNA	
VI3'CL	MOUSE SPERM DNA	
PMU3'CL	RABBIT ADULT SPLENIC CDNA	
CAIMAN'CL	CAIMAN ADULT GENOMIC DNA90	
VR101'CL	MOUSE ADULT DNA	84

## SPECIFIC NOTES: SIGNAL PEPTIDES OF HUMAN HEAVY CHAINS

- 13) 51P1'CL: FROM HUMAN FETUS AT 130 DAYS OF GESTATION.  
 15) 783c'CL: ALSO KNOWN AS 783'CL.  
 23) 1B9/F2'CL: FROM A PATIENT WITH B CELL ACUTE LYMPHOCYTIC LEUKEMIA WITH CHARACTERISTIC t(8;14) CYTOGENETIC TRANSLOCATION AT DIAGNOSIS.  
 24) 71-5'CL: THIS IS CLASSIFIED AS A PSEUDOGENE, SINCE THE INTRON IN THE PRECURSOR REGION CANNOT BE SPLICED OUT.  
 31) Lambda IGD-1'CL: CLASS SWITCH FROM IGH TO IGD IS PROBABLY DUE TO HOMOLOGOUS RECOMBINATION BETWEEN sigma/mu and SIGMA/mu.  
 32) OMW'CL: IT WAS FROM A CASE OF HEAVY CHAIN DISEASE.  
 34) 15P1'CL: FROM HUMAN FETUS AT 130 DAYS OF GESTATION.  
 35) FK-001'CL: IT CAN BE EXPRESSED FUNCTIONALLY IN MOUSE MYELOMA CELLS.  
 44) 58P2'CL: FROM HUMAN FETUS AT 130 DAYS OF GESTATION.  
 45) SUP-T1 VH-JA'CL: IT IS FROM A PATIENT SUFFERING FROM CHILDHOOD T-CELL LYMPHOMA WITH inv(14)(q11.2;q32.2). THE INVERSION ON CHROMOSOME 14 BRINGS THE VH GENE AND JA MINIGENE TOGETHER, GIVING RISE TO A HYBRID MOLECULE CONTAINING PART OF THE IMMUNOGLOBULIN GENE AND PART OF THE T-LYMPHOCYTE RECEPTOR FOR ANTIGEN GENE.  
 48) Pag-1'CL: THREE-DIMENSIONAL MODEL HAS BEEN CONSTRUCTED FOR THIS ANTIBODY.  
 49) HuVND'CL: THIS IS A HYBRID HEAVY CHAIN CONSISTING OF FR'S FROM NEWM AND CDR'S FROM B1-8'CL, AN ANTI-4-HYDROXY-3-NITROPHENACETYL CAPROIC ACID MOUSE ANTIBODY. B1-8'CL HEAVY CHAIN HAS A BINDING CONSTANT OF 1.2X10EXP6, AND THIS HYBRID HEAVY CHAIN HAS A BINDING CONSTANT OF 1.9X10EXP6.  
 56) Fog-B'CL: THREE-DIMENSIONAL MODEL HAS BEEN CONSTRUCTED FOR THIS ANTIBODY.  
 57) 6H-3C4'CL: 6H-3C4 IS AN ESTABLISHED HUMAN-MOUSE HETEROHYBRIDOMA WHICH SECRETES A HUMAN IGM-LAMBDA ANTIBODY. THIS SEQUENCE IS OBTAINED BY LIGATING THE VH GENE WITH HUMAN IgG1 REGION. THE NEW HUMAN IgG1-LAMBDA ANTIBODY FULLY RETAINS THE ORIGINAL SPECIFICITY.  
 60) CS-1'CL: CELL LINE CESS  
 61) JBL2'CL: FROM BURKITT'S LYMPHOMA CELL LINES WHICH PRODUCE TRUNCATED HEAVY CHAINS LACKING PART OF VARIABLE REGION  
 63) 4G12'CL: IT RECOGNIZES A TUMOR-ASSOCIATED AND DIFFERENTIATION ANTIGEN OF MW 195,000.  
 64) 30P1'CL: FROM HUMAN FETUS AT 130 DAYS OF GESTATION.  
 73) 3B1'CL: FROM HUMAN FETUS AT 130 DAYS OF GESTATION.  
 82) 60P2'CL: FROM HUMAN FETUS AT 130 DAYS OF GESTATION.  
 83) 63P1'CL: FROM HUMAN FETUS AT 130 DAYS OF GESTATION.  
 86) 56P1'CL: FROM HUMAN FETUS AT 130 DAYS OF GESTATION.  
 88) 2P1'CL: FROM HUMAN FETUS AT 130 DAYS OF GESTATION.  
 89) KIM4.6 CELL LINE WAS PRODUCED BY FUSION OF TONSILLAR LYMPHOID CELLS FROM A NORMAL CHILD WITH GM4672, AN IgG-KAPPA PRODUCER.

- 90) FL2-2'CL: DERIVED FROM HUMAN GENOMIC DNA OF EPSTEIN-BARR VIRUS-TRANSFORMED FETAL B CELL LINE.  
 95) 333'CL: FROM A HUMAN B CELL LYMPHOMA AFTER ANTI-IDIOTYPIC ANTIBODY TREATMENT.  
 96) 1B11'CL: FROM A HUMAN B CELL LYMPHOMA AFTER ANTI-IDIOTYPIC ANTIBODY TREATMENT.  
 97) 112'CL: FROM A HUMAN CELL LYMPHOMA AFTER ANTI-IDIOTYPIC ANTIBODY TREATMENT.  
 98) VH10.7'CL: FROM PATIENT WITH IGD-SECRETING MYELOMA. THE V- AND C-REGIONS ARE BROUGHT TOGETHER BY A HOMOLOGOUS RECOMBINATION BETWEEN 442/443-BASE-PAIR REPEATS DELETING THE C-MU.  
 99) K6H6'CL: FROM A PATIENT WITH B-CELL LYMPHOMA.  
 100) K4B8'CL: FROM A PATIENT WITH B-CELL LYMPHOMA.  
 101) K5B8'CL: FROM A PATIENT WITH B-CELL LYMPHOMA.  
 102) K5G5'CL: FROM A PATIENT WITH B-CELL LYMPHOMA.  
 103) K5C7'CL: FROM A PATIENT WITH B-CELL LYMPHOMA.  
 104) K5F5'CL: FROM A PATIENT WITH B-CELL LYMPHOMA.  
 105) Ly47'CL: FROM BURKITT'S LYMPHOMA CELL LINES WHICH PRODUCE TRUNCATED HEAVY CHAINS LACKING PART OF VARIABLE REGION  
 106) Ly91'CL: FROM BURKITT'S LYMPHOMA CELL LINES WHICH PRODUCE TRUNCATED HEAVY CHAINS LACKING PART OF VARIABLE REGION

## SIGNAL PEPTIDES OF MOUSE HEAVY CHAIN

INVARIANT RESIDUES 1 2 3  
TFS- E7'CL H37-  
139 'CL 68'C-20 MET (99) MET MET MET  
-19 MET MET MET MET  
-18 VAL VAL VAL VAL  
-17 LEU LEU LEU LEU  
-16 SER SER SER SER-15 --- --- --- ---  
-14 LEU LEU LEU LEU  
-13 LEU LEU LEU LEU  
-12 TYR TYR TYR TYR  
-11 --- --- --- ----10 LEU LEU LEU LEU  
-9 LEU LEU LEU LEU  
-8 LEU LEU LEU LEU  
-7 ALA ALA ALA ALA  
-6 LEU LEU LEU LEU-5 PRO PRO PRO PRO  
-4 GLY GLY GLY GLY  
-3 ILE ILE ILE ILE  
-2 LEU LEU LEU LEU  
-1 SER SER SER SER21 22 23 24 25  
Lym-1 2B2 12G10 10G10 2C  
CL CL CL CL CL-20 MET MET MET MET  
-19 ALA ALA ALA ALA  
-18 VAL VAL VAL VAL  
-17 LEU LEU LEU LEU  
-16 GLY VAL VAL VAL-15 LEU LEU LEU LEU  
-14 LEU PHE PHE PHE  
-13 LEU LEU LEU LEU  
-12 CYS CYS CYS CYS  
-11 --- --- --- ----10 LEU LEU LEU LEU  
-9 VAL VAL VAL VAL  
-8 THR ALA ALA ALA  
-7 PHE PHE PHE PHE  
-6 PRO PRO PRO PRO-5 SER SER SER SER  
-4 CYS CYS CYS CYS  
-3 VAL VAL VAL VAL  
-2 LEU LEU LEU LEU  
-1 SER SER SER SER

AT PI SF LI VI SI

-10 LEU LEU LEU LEU  
-9 VAL VAL VAL VAL  
-8 THR ALA ALA ALA  
-7 PHE PHE PHE PHE  
-6 PRO PRO PRO PRO-5 SER SER SER SER  
-4 CYS CYS CYS CYS  
-3 VAL VAL VAL VAL  
-2 LEU LEU LEU LEU  
-1 SER SER SER SER

SF PI VI LI SI

-10 LEU LEU LEU LEU  
-9 VAL VAL VAL VAL  
-8 THR ALA ALA ALA  
-7 PHE PHE PHE PHE  
-6 PRO PRO PRO PRO-5 SER SER SER SER  
-4 CYS CYS CYS CYS  
-3 VAL VAL VAL VAL  
-2 LEU LEU LEU LEU  
-1 SER SER SER SER

SF PI VI LI SI

43 44 45 46 47  
16 31' 1.29 11.15 3-1  
B5.7'CL CL CL CL CL-20 MET MET MET MET  
-19 ASP GLY GLY GLY  
-18 ARG ARG TRP TRP TRP  
-17 LEU LEU SER SER SER  
-16 THR THR TRP TRP TRP-15 SER PHE ILE ILE IL  
-14 SER SER PHE PHE PH  
-13 PHE PHE LEU LEU LE  
-12 LEU LEU PHE PHE PH  
-11 --- LEU --- --- ---10 LEU LEU LEU LEU LE  
-9 LEU LEU LEU LEU LE  
-8 ILE PRO SER SER SER  
-7 VAL VAL GLY GLY GL  
-6 PRO PRO THR THR TH-5 ALA ALA ALA ALA AI  
-4 TYR TYR GLY GLY GI  
-3 VAL VAL VAL VAL VA  
-2 LEU LEU LEU LEU LE  
-1 SER SER SER SER SE

AI GI VA HI SI

-10 LEU LEU LEU LEU LE  
-9 LEU LEU LEU LEU LE  
-8 ILE PRO SER SER SER  
-7 VAL VAL GLY GLY GL  
-6 PRO PRO THR THR TH-5 ALA ALA ALA ALA AI  
-4 TYR TYR GLY GLY GI  
-3 VAL VAL VAL VAL VA  
-2 LEU LEU LEU LEU LE  
-1 SER SER SER SER SE

AI GI VA HI SI

66 67 68 69 70  
B13.13'CL 30'E4 5.4.1  
H4C8'CL CL CL CL CL-20 MET MET MET MET  
-19 GLU GLY GLY GLY  
-18 TRP TRP TRP CYS TRP  
-17 PRO SER SER GLY SER  
-16 LEU ARG ARG ILY CYS-15 ILE ILE ILE SER ILE  
-14 SER PHE PHE LEU ILE  
-13 LEU LEU VAL VAL LEU  
-12 PHE PHE PHE PHE PHE  
-11 --- --- --- --- ---10 LEU LEU LEU LEU LE  
-9 LEU LEU LEU VAL ALA  
-8 SER SER SER LEU ALA  
-7 GLY ILE ILE ILE ALA  
-6 THR ILE ILE LEU ALA-5 ALA ALA ALA LYS THR  
-4 GLY GLY GLY SER MI  
-3 VAL VAL VAL VAL VA  
-2 GLN HIS HIS HIS HIS  
-1 SER CYS CYS SER SE

MI VA HI SI



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